A Clinical Lecture
ON
CANCER OF THE RECTUM.

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IN dealing with the extirpation of carcinomatous growths in various parts of the body the modern tendency is to enlarge the area of operation in order that the lymphatic supply of the part affected may be widely removed with the primary growth. I remember the time when the axillary glands were only removed in cases of cancer of the breast when they were palpably enlarged, but now we remove the pectoral and axillary lymphatic areas in every case. In cancer of the tongue, too, it is only in comparatively recent times that we have adopted the removal of the lymphatics of the neck as a routine measure, and in this, as in the case of cancer of the breast, the wider operation has resulted in a diminished tendency to that recurrence which all patients afflicted with cancer have such good reason to dread.

Many of the operations for cancer of the rectum do not allow of a sufficient removal of the lymphatic area in the neighbourhood of the growth, and recurrence of the mischief is so common that Bergmann[1] considers it probable that only "about one-fourth or one fifth of the patients operated upon for cancer of the rectum can be permanently freed from their disease." This deplorable state of affairs is only likely to be improved when it becomes the rule to operate in such a manner as to permit of a more extensive removal of the lymphatics, as in the case of operations for cancer of the breast and tongue, and it is in order that we may consider how this may be best accomplished that I have brought this subject before you to-day—exemplified by a case which will serve to illustrate some points in the diagnosis and treatment of cancer of the rectum.

Mrs. W., aged 56 years, was admitted under my care for pain and difficulty in defaecation For twelve months previously she had complained of a gradually increasing constipation, and aperients were constantly necessary. The stools frequently contained blood, and there was also a more or less continuous blood-stained discharge. There was rectal tenesmus, and at times the motions were "loose and frothy." There had been loss of flesh and a general feeling of languor. For the past three months these symptoms had increased in severity, and there had been considerable sacral pain, especially after walking. The patient was pallid and somewhat thin. No tumour could be felt in the abdomen. Per rectum a hard irregular growth could be felt projecting into the lumen of the gut about 2½ in. from the anus. The rectum was invaginated by the growth, and on palpation resembled the cervix uteri. The lumen of the gut at the situation of the tumour would just admit the forefinger. The growth was movable, and there was no involvement of the vagina or other tissues in the neighbourhood. No enlarged glands could be felt. After a period of purgation and enemata to thoroughly empty the lower bowel, the patient was placed in the Trendelenburg posture, and a median abdominal incision was made from just below the umbilicus to the pubes. A double ligature was placed on the sigmoid flexure near its centre, and the bowel divided between the two ligatures. The upper end was tied up in gauze to prevent infection, and the lower end was invaginated into the bowel below by means of a purse-string suture. An incision was then made through the peritoneum on either side of the rectum, joined below by an incision through the peritoneum of the pouch of Douglas. The flaps of peritoneum were turned outwards, and the superior haemorrhoidal vessels were tied near the top of the sacrum. The lower part of the sigmoid and the rectum were then freed from all surrounding connexions as far as the insertion of the levatores ani, the mesorectum and all its contained lymphatic glands being turned out of the hollow of the sacrum with the rectum by forcibly detaching it from the bone by gauze. The parts thus set free were crowded down into the pelvis, and the cut portions of the peritoneum were approximated. The patient was then placed in the lithotomy position, a circular incision was made round the anus and extended backwards to the coccyx in the mid line. Through this incision the lower part of the rectum was freed, and, after division of the levatores ani, the whole rectum, with the mesorectum and glands and part of the sigmoid flexure, were delivered through the perineal incision. A rubber drain and some gauze were inserted, and the rest of the perineal wound was closed. The upper end of the sigmoid (which had been tied up in gauze) was then brought through an opening made by blunt division of the muscles in the left iliac fossa near the anterior superior iliac spine. The ligature round the bowel was removed and a Paul's tube tied into the lumen, the gut being sewn to the adjacent peritoneum. The median abdominal incision was completely closed. The operation was not followed by any marked shock, convalescence was uninterrupted, and the patient left the Infirmary on the twenty-sixth day after operation with the abdominal and perineal wounds quite healed, the colotomy wound in a healthy condition, and the bowel acting satisfactorily. On microscopical examination the growth proved to be of the ordinary type of adeno-carcinoma.

The symptoms of which this patient complained may be regarded as typical of cancer of the rectum, but for a long time they were regarded as due to piles. This is perhaps the most common mistake, owing to the fact that haemorrhage and rectal discomfort are common to piles and cancer, but if we are to reduce the present high rate of recurrence in the latter, it is important that the cases should be diagnosed correctly as early as possible.

The early stages of cancer of the rectum are frequently unaccompanied by any marked symptoms, and the insidiousness of the disease is well known. Pain occurs in all cases of rectal cancer sooner or later, and towards the end may be very severe, but in the early stage it is, in my experience, often absent. Haemorrhage is perhaps a more common symptom, but this may be absent until the disease is well established. I have recently had under my care, in private, two cases which emphasize the difficulty of diagnosis in these cases unless a proper examination is made in all cases of rectal trouble, and this is the only way in which you can prevent yourself from falling into serious error. The one was a gentleman who had slight constipation and bleeding, which he attributed as usual to piles; but noticing on one occasion a little more blood than usual he was wise enough to consult his medical attendant, and the latter fortunately made a rectal examination and discovered the cancer of the rectum. The patient looked perfectly well, and felt so, and yet he had a fairly advanced condition of the disease, though I was able to perform on him an operation similar to the one above referred to. The other case was in a patient aged 60, who had a slight rectal discomfort but had had no pain, haemorrhage, diarrhoea, or constipation, and yet he had an advanced condition of cancer of the rectum associated with such widespread glandular involvement that a radical operation was impossible. Ulceration and stenosis occur relatively early, and then we get the passage of blood-stained mucus, foul smelling discharge and diarrhoea, alternating with constipation. The last fact is to be borne in mind, and all cases complaining of an uncontrollable diarrhoea should be subjected to rectal examination.

Our aim should be to arrive at a diagnosis sufficiently early in the case to allow of a radical operation with a good prospect of ridding the patient of the mischief. In all cases of definite rectal trouble a digital examination should be insisted on, and it is sometimes found that a growth which cannot otherwise be reached may be brought to the examining finger by getting the patient to strain downwards in the standing position. If no growth is discovered and cancer is suspected a further examination should be made under an anaesthetic, and with the aid of the sigmoidoscope if necessary.

Although most cases of cancer of the rectum commence after 40 years of age, the disease occurs with even greater virulence in younger people. I have excised the rectum for cancer in a patient aged 21 years, and other observers have operated for this condition at a still earlier age.

The later characters of the growth have been described in the case under discussion; earlier in the disease the hard nodular margin of the growth infiltrating the tissues around and the smoothness of the unaffected mucous membrane below leave no doubt as to the character of the mischief, even though the patient looks quite healthy and has suffered little discomfort.

When the diagnosis has been established we have to decide whether the case is suitable for a radical operation There was no difficulty in doing this in the case I have narrated, where the growth was movable and non-adherent, though a slight involvement of the vaginal walls need not deter one from operation. But where the bladder is involved, or where there are extensive adhesions to the sacrum, a radical operation should not be recommended, as recurrence would certainly take place. When there is sufficient obstruction to cause an accumulation of faeces above the growth, the amount of fixation often appears to be more than is actually the case. You should not,

therefore, hastily decide that a case is unfit for the radical operation until the bowel has been thoroughly emptied by means of enemata and purgatives. It is not uncommon to find that with the removal of the accumulation the growth is much more limited than it at first seemed to be.

Having decided to perform a radical operation, it is highly desirable that the bowel should be empty beforehand, and though it may take the greater part of a week to ensure this condition by means of enemata and aperients, the time is well spent. A loaded intestine is a source of danger at the time of operation, and, moreover, patients suffering from the effects of absorption of intestinal toxins are less able to bear the shock of a severe operation. In late cases, where the patient has a definite chronic obstruction, it is occasionally necessary to perform a preliminary colotomy, in order that the bowel may be relieved of its germ-laden contents before the radical operation is proceeded with. It should, however, be our constant aim to operate at an early stage of the disease, before any marked obstruction has supervened.

There are several ways of attacking a rectal carcinoma. Let me first briefly enumerate some of these, and then point out to you the reasons why I chose that method of operation which was adopted in the case which forms the basis of this lecture.

A growth situated, as this one was, about 2½ in. from the anus might have been removed by the sacro-coccygeal route (Kraske's operation), by the abdomino-anal route, in which the sigmoid flexure is brought down to the anus after the whole rectum has been excised, or by the abdomino-perineal route, in which the whole rectum—including the sphincter—is excised and an artificial anus made in the left iliac fossa or other part of the lower abdomen. It was this last method which was adopted in the case above quoted.

Apart from the fact that those of us who are familiar with abdominal operations find it easier to excise the rectum from above, it is clear that a wider removal of the rectum and the lymphatic glands of the pelvis is possible through an abdominal incision. That this more extensive operation is necessary is shown by the unsatisfactory results of the sacro-coccygeal (Kraske) operation. We cannot be content with a method that is not only attended by a fairly high mortality, but which also is followed by recurrence of the disease in a large proportion of cases. The average mortality of Kraske's operation in the hands of twelve well known surgeons appears to be over 20 per cent., and the permanent cures after rectal excision, as shown by the average results of nine leading operators, is under 16 per cent.[2]

These results leave much to be desired, and I believe that by the adoption of some form of abdominal operation in all cases of cancer of the rectum (except, perhaps, those which are situated quite low down near the anus) we may ultimately succeed in placing the operative treatment of this disease on a satisfactory basis.

Having explained the reasons for preferring one of the forms of abdominal operation, let us see why the abdomino-perineal route was chosen instead of the abdomino-anal; or, in other words, why was an artificial anus made in the left iliac fossa instead of bringing the divided sigmoid flexure down to the anus? The abdomino-anal operation is certainly preferable if the patient has sphincteric control; and in this case, as in the majority of patients, it would have been quite possible to bring the divided sigmoid down to the anus; but it appeared doubtful whether the growth was not too low to run the risk of recurrence by leaving any part of the rectum, and, in any case, it seemed certain that the necessary incisions for freeing the lower part of the gut must result in the division of the nerve supply of the external sphincter, which would, therefore, be functionless. If sphincteric control cannot be obtained, it is better to make an artificial anus in the lower abdomen.

Some time ago I performed the abdomino-anal operation upon a lady in whom I was able to preserve the sphincters, but (probably owing to nerve division), unfortunately, control was lost. The resulting incontinence was so troublesome that I yielded to her desire to perform a colotomy some months after the operation for excision of the rectum. This was found to be much more manageable, and probably most patients would prefer an artificial anus above, rather than an anus over which they had no control in the normal situation. On the other hand, it is highly desirable to preserve the sphincters and bring the divided sigmoid down to the anus in all cases where it is possible so to do.

There is one other question which may arise in your minds—namely, the reason why the artificial anus was made in the left iliac fossa rather than by anchoring the divided sigmoid flexure in some part of the median abdominal incision. In the performance of an ordinary sigmoidostomy an incision through the left rectus near the median line is sometimes deliberately chosen with advantage, and I have found such an artificial anus very satisfactory; but after excision of the rectum it is undesirable to risk the fouling of the comparatively large central incision by the necessary escape of faeces, and, therefore it is better to make the artificial anus through a separate opening in the left iliac fossa. In this way contamination of the median incision can be avoided, and healing by first intention can thus be generally assured.

The operation of excision of the rectum for cancer which I have been advocating through an abdominal incision has not yet been generally adopted, and it is too early to compare its mortality and the freedom from recurrence of the disease afterwards with other methods. In the sacro-coccygeal route it is a well-known fact that the higher the disease is situated in the rectum the greater the mortality. Again quoting Bergmann,[3] who refers to Rave's statistics of 335 cases of rectal carcinoma treated by operation in various clinics, he says:

> The higher tumours were almost all operated upon by Kraske's method, with a mortality of 23 per cent. . . . For high-seated tumours it gave a mortality of 33 per cent. in women and 19 per cent. in men. This higher mortality in women may be explained by the fact that the tumours easier of access, were operated upon perineally in women.

We might, therefore, presume that the abdominal operation would probably be attended by a high mortality, but we must remember that with new methods of treatment the mortality is generally higher than when the principles of the operation are better understood. The mortality of Kraske's operation is said to have been from 30 to 50 per cent. at first, but this was diminished when better means for the prevention of sepsis were adopted. I have elsewhere[4] shown that resection of the large bowel for carcinoma is fairly well borne even by those of advanced years, and I have not found, so far, any excessive amount of shock in the operation of excision of the rectum by the abdominal route.

With our present means of preventing infection of the operation area, I do not think the mortality of the abdominal route will be found unduly high in experienced hands; and the greater opportunity we have, by its adoption, of examining the growth (and deciding for or against the desirability of excision) and the more thorough removal of the lymphatics with the primary growth which this method allows, will probably ensure for it the chief place in the various radical operations for carcinoma of the rectum.

REFERENCES.

[1] V. Bergmann, *A System of Practical Surgery*, vol. v, p. 172. [2] Gant, quoted in Kelly and Noble's *Gynecology and Abdominal Surgery*, vol. ii, p. 488. [3] V. Bergmann, Op. cit., p. 169. [4] Swain, BRITISH MEDICAL JOURNAL, January 10th, 1903.

THE lectures and discussions of the Child Study Society were resumed at the house of the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W., on Thursday last, when Dr. R. Langdon-Down gave an address on the social relation of the child. Next Thursday Dr. J. Lionel Tayler will speak on types of children, their observation, and nurture. On April 7th Dr. T. B. Hyslop will give a lecture on subconsciousness, and on April 21st Dr. C. A. Mercier will introduce a discussion of the aims of education. The meetings begin at 7.30.

THE late Mr. John Wortley Axe, Chief Veterinary Inspector to the Surrey County Council, in addition to making certain other dispositions for the benefit of the Royal College of Veterinary Surgeons and its old students, bequeathed £400 to its council to defray the expense of painting full-length portraits of Professors Spooner, Summers, Varnell, and Brown, to be hung in the council chamber of the college in recognition of their great services to veterinary science.

A Clinical Lecture
ON
CANCER OF THE CERVICAL OESOPHAGUS.*

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I HAVE chosen this subject for my lecture as, in the first place, cancer of the cervical portion of the oesophagus is a condition frequently met with, and operative technique has advanced so far in recent years in the treatment of this condition that not only is it possible at times to remove the growth, but even to restore the continuity of the tube by plastic procedures. In the second place, the extension of the growth into the thyroid is not so rare as one would be led to suppose by the almost complete absence of any mention of this condition in the textbooks,† whilst the clinical picture which is sometimes offered by this direction of spread may, unless one is aware of the possibility, lead to the erroneous diagnosis of primary carcinoma of the thyroid, as happened in one of my cases.

I shall begin by giving a brief sketch of the symptoms and physical signs of an uncomplicated case of carcinoma of the cervical oesophagus, shall then deal with the complications in the clinical picture produced by extension of the growth into surrounding parts, and, lastly, describe the operative treatment of the condition.

The disease manifests itself usually after the age of 45, but the age of the earliest case on record was 19. Men are more frequently affected than women, in the proportion of 7 to 3, whereas pharyngeal tumours seem to be more common in women. The cervical portion is said to be the seat of the lesion in about 12 per cent. of all cases of cancer of the oesophagus.

PATHOLOGY.

The commonest form of carcinoma is the squamous epithelioma with a tendency to well-marked cell-nest formation. More rare is the softer medullary carcinoma with cubical cells and large alveoli, originating in the glands; and occasionally very hard carcinomata of the scirrhous variety, with abundant fibrous tissue and very few cells, are met with.

The squamous epitheliomata are at first usually firm, flat, greyish-white tumours involving part of the circumference of the oesophagus; at first covered by epithelium, they later undergo ulceration, which is brought about either by irritation of the surface by food or through the decomposition of the particles of food which become lodged above or on the growth. As the tumour increases in size, it tends to encircle the lumen; it may remain a flattened ulcer, or be irregularly proliferating. The margin of the ulcer is hard and infiltrated, and it is this which produces in the main the stenosis. The medullary carcinomata proliferate much more rapidly, and produce irregular cauliflower-like growths which disintegrate early. The scirrhous carcinomata, as one would expect, produce the greatest amount of stenosis by the contraction of the abundant fibrous tissue.

The growth at first remains limited to the mucous membrane and submucous tissues, but later spreads into the muscular wall, and eventually perforates the oesophagus. Once outside, the rate of growth seems to become much more rapid, and the surrounding structures become involved by the neoplasm proliferating into the loose areolar tissue. The rapid increase in the size of the tumour, formed once the cancer has begun to spread externally, is undoubtedly in some considerable part contributed to by the septic infiltration brought about by the spread of infection through the perforation of the oesophagus. In the immediate neighbourhood of the primary growth collections of cancer cells forming small tumours in the course of the lymphatics can frequently be seen. Occasionally a second carcinomatous growth will be found at some distance from the first. This occurred in one of the cases I shall describe later; the main growth was opposite the upper tracheal rings, and a second smaller one was situate at the level of the bifurcation of the trachea; the intervening mucous membrane had the appearance of being perfectly healthy. It is interesting in this connexion to note that a second growth at some distance from the primary growth may also be found in the colon and rectum. The fact that solid food passes through the oesophagus, and that in the colon the intestinal contents are again becoming solid, suggests the possibility that the second growth may be due to implantation from the primary tumour.

There is almost always some dilatation of the oesophagus above the growth.

SYMPTOMS.

Those due to the presence of a carcinoma confined to the oesophagus are few in number, and cases have been described where a growth unsuspected during life was found *post mortem*. Usually the first and most constant symptom is the feeling that the food gets stopped when it reaches some point in the oesophagus—a spot quite easily localized when the cervical part is involved. This "sticking" of the food is generally first noticed when some mouthful larger or drier than usual is swallowed, and it may subsequently for some weeks, or even months, be a very variable symptom, the patient at one time swallowing solids easily, and at another being only able to take fluids or semi solid food. This variation sometimes leads to the erroneous diagnosis of hysteria. Eventually, however, the obstruction to solids becomes permanent, and later even liquids cannot be swallowed. At the seat of arrest there is often some pain. Regurgitation of food in an unaltered condition becomes a frequent symptom, and when the growth is situate close to the opening of the larynx there may be overflow into the larynx, producing spasm of the vocal cords and cough. When ulceration takes place, the food may return streaked with blood, and even pieces of growth may be brought up. With the extension of the disease and the increasing difficulties in taking nourishment there is progressive wasting and weakness, and as the obstruction becomes more complete thirst causes great discomfort.

During this stage there is no swelling to be felt in the neck, though at times there is some forward projection of the trachea; but the position and amount of constriction caused by the cancer can be ascertained by the passage of bougies, whilst the exact appearance of the upper part can be seen by direct oesophagoscopy.

With the extension of the growth beyond the oesophagus there is usually increase in the pain, due to the involvement of more sensitive parts, and even of nerves, such as the cervical or brachial plexus, and due, in addition, to the presence of inflammatory infiltration in the tissues of the neck.

When the growth is at the upper end of the oesophagus it may extend to the larynx and produce the picture of a subglottic growth, while symptoms of dysynoea and aphonia may be present, owing to the oedema produced by inflammation in the neighbourhood of the tumour. Ulceration of the tumour into the lower part of the larynx generally gives rise to some cough, and the patient brings up a considerable amount of secretion, composed partially of discharge from the surface of the growth and partially of mucus due to the increased activity of the mucous glands in the neighbourhood. These cases may at any time develop pneumonia from inhalation of the septic products of the growth. Even in those cases where the oesophageal cancer does not penetrate into the trachea there may be very marked thickening of the lining wall. This thickening, which was present in one of my cases, produced such marked narrowing of the trachea that the lumen was reduced by three-fifths, and there was consequently shortness of breath on the least exertion. The thickening, though it has the naked-eye appearance of growth, is in reality due to a hypertrophy of the mucous glands and of fibrous tissue.

At times the growth extends backwards and produces erosion of the vertebrae. There is then generally marked increase in the pain, limitation of movements of the neck, and a curved rigid spine may result. Growths have been described which produced pressure on the spinal cord. The common carotid artery and the internal jugular vein

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† McCrae, in his article on Diseases of the Oesophagus, in Osler and McCrae's *System of Medicine*, gives a special paragraph on *extension to neighbouring structures*, but does not even mention the thyroid gland.

are the two vessels most often implicated, but the subclavian, thyroid, and vertebral arteries may be also affected. The growth tends to surround the arteries and compress them, so that in the case of the carotid a distinct difference can be detected when examining the corresponding facial arteries or any of the other branches. At times, however, the growth ulcerates into the vessels, and then the termination is usually caused by a rapid uncontrollable haemorrhage. In the case of the veins, however, thrombosis usually occurs early, and produces obliteration before either haemorrhage or compression occurs. Rarely the thoracic duct is involved on the left side, and complicates the picture by the oedema and ascites which may ensue. The symptoms most commonly produced are those due to involvement of nerves. Pressure on the recurrent laryngeal gives rise at first to stridor and hoarseness; later, when the adductor fibres are paralysed as well as the abductor and the cord assumes the cadaveric position, there may be improvement in both the stridor and hoarseness. Paralysis of the sympathetic gives rise to a contracted pupil on the same side, narrowing of the palpebral fissure and enophthalmos. There are usually no symptoms to be recognized in connexion with involvement of the vagus. Rarely the growth extends to and surrounds the brachial plexus, and produces considerable pain in the area of distribution of the affected nerves. Lastly, there is the invasion of the thyroid; but, before dealing with that, one word must be said concerning the spread of growth to the glands. The enlargement of glands, often on both sides of the neck, does not usually take place till late in the course of the illness, but it is possible that the deep cervical glands are affected for some time before this can be recognized clinically.

INVASION OF THE THYROID.

During the last five years there have been 4 cases of carcinoma of the cervical oesophagus, with secondary invasion of the thyroid, in University College Hospital. In 3 of these cases the diagnosis was confirmed by *post-mortem* examination. Two of the cases gave the ordinary history of carcinoma of the oesophagus.

The first of these was admitted in 1904. A. C., aged 59, gave a history of dysphagia of six months' duration, some dyspnoea for two months, and he had noticed a swelling over the thyroid for one month. On admission he had constant stridor and a very weak voice, and there was "weakness" of the right vocal cord. In the inner part of the right posterior triangle, in the situation of the lateral lobe of the thyroid, was a hard mass attached to the trachea, and moving upwards during deglutition. There were in addition numerous hard enlarged glands in both posterior triangles. The patient died two days after gastrostomy, and the necropsy showed extensive infiltration of the thyroid. This case had two carcinomatous growths, one opposite the cricoid and the other opposite the bifurcation of the trachea.

The second case (J. S., aged 61) I saw in the out-patient department in August, 1909. He had suffered from progressive difficulty in swallowing both solids and fluids for one year; he complained also of some pain in the upper part of his chest and of bringing up phlegm. During the last month his voice had been husky. Oesophagoscopy showed obstruction opposite the upper tracheal cartilages. The isthmus of the thyroid was slightly enlarged, fixed, and did not move well with deglutition. The lateral lobes did not seem to be enlarged, but were somewhat adherent to the surrounding structures. A few small glands could be felt in the lower part of the posterior triangle. The left vocal cord was in the cadaveric position. An exploratory operation was done, but it was found that the growth involved the trachea and extended down below the clavicles and the first rib. The wound was therefore closed. The patient died on the third day from a sudden attack of syncope.

At the *post-mortem* examination a soft growth was found involving the whole circumference of the oesophagus; the tumour had extended also into the posterior mediastinum. At the level of the upper border of the sternum there was a perforation into the trachea into the lumen of which a nodule of growth the size of a pea was projecting. On the left side the growth was invading the lateral lobe of the thyroid, and sections of this gland show masses of squamous cells in the fibrous tissue of the capsule and extending among and replacing the alveoli of the thyroid gland. In some of the alveoli at a part not invaded by the growth there is proliferation of the lining membrane, the cells of which have become detached, swollen and vacuolated, and are lying scattered in the colloid, which in these alveoli is rapidly disappearing. The growth from the oesophagus is a squamous-celled carcinoma.

In both cases, then, it is seen that the thyroid gland was invaded, and in both the invasion could be recognized clinically. Although in neither case could a radical operation be performed, yet it does not necessarily follow that all cases in which this gland is implicated are necessarily hopeless. It is, of course, certain that the disease is advanced, and that probably the adjacent part of the trachea will have to be removed as well as the oesophagus, lateral lobe of the thyroid and adjacent vessels and nerves; but it is quite possible to support life under such conditions, and for the patient even to talk and swallow his food.

The other two cases are, however, much more interesting, in that they offer a clinical picture which suggests strongly a primary carcinoma of the thyroid.

The first of these (J. H., aged 51), was an in-patient in this hospital in 1904. The man came up complaining of hoarseness, cough and shortness of breath, which had been present for eight months; four months ago he first noticed some lumps in his neck, whilst only for the last five weeks had there been any difficulty in swallowing. The patient was very hoarse and had a constant cough. There was an ill-defined swelling and induration at the root of the neck; the swelling was more distinct on the right side close to the sternum; from this part it spread forward into the thyroid, where it again became ill-defined. There were several hard enlarged glands in the right posterior triangle. There was abductor paralysis of the right vocal cord and irritation of the right sympathetic. The patient had difficulty in swallowing solids and only a small-sized oesophageal bougie could be passed. The patient left the hospital without operation.

Last of the cases is the woman (A. A., aged 33), on whom I operated for carcinoma of the thyroid. She came to the hospital complaining of swelling in the neck of four months' duration, huskiness of the voice of three weeks', and shortness of breath of one week's, duration. In answer to a question, she said that she had had some difficulty in swallowing solids for the past fortnight. Both lobes of the thyroid were enlarged, but the left more so than the right. The outline of the left lobe on the inner side was quite distinct, but on the outer and posterior aspect it faded off into a deeper mass of induration. The lobe was very hard and fixed. The carotid could not be felt on this side, as it was included in the induration but not compressed. There were a few hard, slightly enlarged glands in the left posterior triangle. When first seen there was abductor paralysis of the left recurrent laryngeal, and a week later complete paralysis. No bougies were passed into the oesophagus. I made the diagnosis of carcinoma of the left lobe of the thyroid, and thought the right might also be affected. At the operation, therefore, I first explored the right lobe, but found no evidence of growth. The left lobe, however, was definitely affected, and the growth appeared to extend from it and to surround the carotid sheath. The jugular and common carotid were ligatured both above and below and cut through; that portion also of the vagus which went through the growth was excised.* I found afterwards, however, that the growth, although surrounding and slightly adherent to the common carotid and vagus, was not actually involving them. The left lobe of the thyroid was freed at its upper and lower poles, and then separated from the trachea and isthmus. It was now evident that the growth invaded the oesophagus, and in effecting the separation an opening was made into the latter. The patient's condition was very good for the next forty-eight hours, and then she became restless, comatose, and died.

At the *post-mortem* examination a carcinoma of the oesophagus was found extending for 2 in. down from the level of the cricoid. The growth had involved all the coats on the left side and had extended into the neck, surrounding the carotid sheath and producing thrombosis of the jugular vein, and invading the left lobe of the thyroid (Fig. 1). Near the lower border the growth was beginning to perforate the trachea. The lumen of the trachea, however, and of the lower part of the larynx was much diminished by hypertrophy of the mucous glands, increase in fibrous tissue and to a small extent round-celled infiltration. The microscopic character of the growth is that of a squamous carcinoma (Figs. 2 and 3), with considerable tendency to cell-nest formation. Sections of the thyroid gland show columns of squamous carcinoma penetrating the fibrous capsule, which is considerably thickened (Fig. 4), while large masses of these cells can be seen extending between the alveoli and in places destroying and replacing them (Fig. 5).

It is thus evident that in certain cases the signs of the extension of the growth in the thyroid may be maximal while those of the primary oesophageal tumour are minimal, giving the clinical picture, that is to say, of a fairly advanced case of malignant disease of the thyroid. When, however, the possibility of such an error is recognized, avoidance of it can be ensured by the examination of the oesophagus with the oesophagoscope. The presence of this condition does not necessarily mean that the case is inoperable, though it does mean that it is only by an extensive operation that the disease can be removed.

TREATMENT.

The results of operations upon the oesophagus are probably more depressing than those of any other region. The oesophagus is only readily accessible in a very short part of its course, and until quite recently the intrathoracic part was regarded as practically outside the range of

* There was no obvious alteration in either the pulse or respiration when this was done.

operative interference on account of the fatal results which attended the efforts of those surgeons bold enough to attempt relief. The introduction of the "Ueberdruck" and "Unterdruck" mechanisms for preventing the collapse of the lung on opening the pleura does, however, hold out hopes for the future. In the neck, where the oesophagus can be reached without such attendant dangers, the advance of the disease, either before it is diagnosed or before it reaches the surgeon, often precludes either an attempt at removal or, at any rate, its success. Here, again, there should be some considerable hope of advance, in that, whereas before the sole method of confirming the diagnosis was by the passage of bougies, which in cases of a flat non-ulcerated growth might fail to establish any marked degree of stricture, we now possess in the oesophagoscope the means of seeing the form and extent of the upper extremity of the growth and its nature, though not the actual length. It is absolutely certain, then, that every case which shows symptoms suggestive of carcinoma of the upper part of the oesophagus should be examined with the oesophagoscope without delay. As soon as the condition is diagnosed operation should be undertaken in order at any rate to attempt to excise the growth, instead of waiting until the patient is reduced by the increasing difficulty in swallowing, and then doing a gastrostomy, as too often happens.

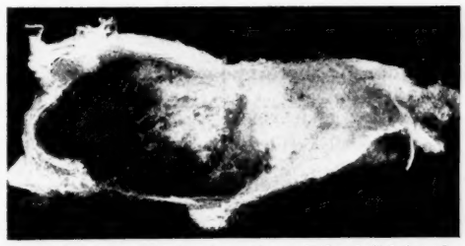

Fig. 1.—Longitudinal section of the left lobe of the thyroid. × 1. Showing invasion of gland by squamous carcinoma.

The chief facts of the treatment may be summarized in a few sentences:

1. The technical difficulties in the actual removal of an operable growth are never great and the operation in itself is not dangerous.

2. The main objections to the operation are the great dangers of speading infections in the cases where the oesophagus cannot be closed completely; and, should the patient survive this danger, the troubles consequent upon the mutilation involved.

It is generally impossible to know exactly the longitudinal extent of the growth until the oesophagus has been opened. In accordance with the state of affairs found the operations may be divided into four groups:

Fig. 2.—Squamous carcinoma of oesophagus. × 100.

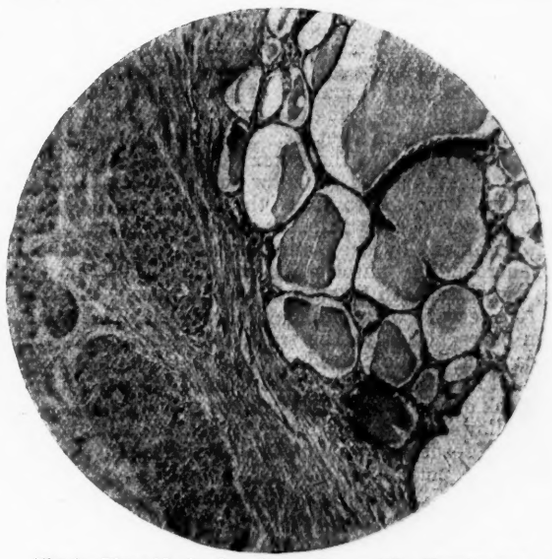

Fig. 4.—Thyroid gland and capsule. × 100. Showing carcinomatous cells invading capsule.

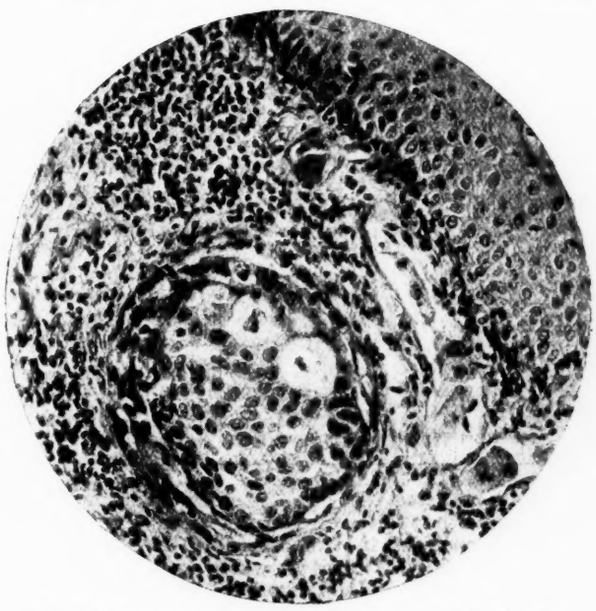

Fig. 3.—Squamous carcinoma of oesophagus. × 400. Showing cell-nest formation.

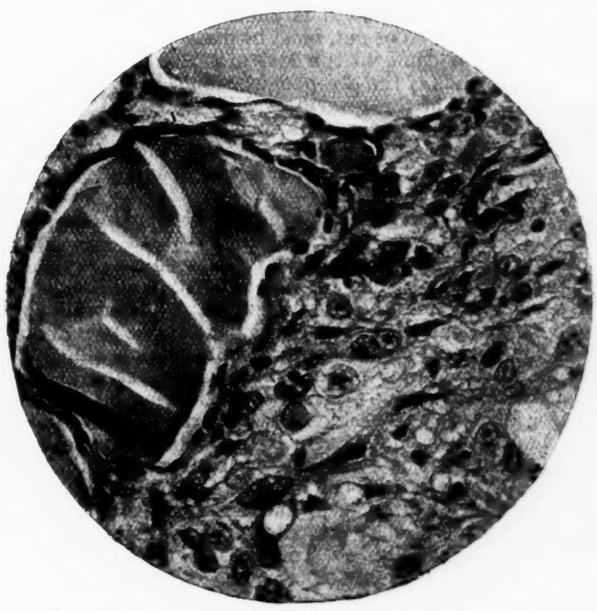

Fig. 5.—Invasion of thyroid gland by squamous carcinoma. × 400.

1. Where the growth extends too far into the posterior mediastinum to permit of removal.

2. Where a small part only of the circumference of the oesophagus is involved.

3. Where the whole or greater part of the circumference is invaded by tumour but the total length does not extend to more than 2 cm.

4. Where the length is greater than 2 cm. or there is involvement of the trachea or larynx in addition.

In the first case, of course, further operation is impossible, and the oesophagus must be closed by two rows of sutures.

Cases which come into the second group are unfortunately but rarely seen. In recent years there has been only one such case operated on in this hospital; in this patient a longitudinal ulcer, 2 cm. long, was excised from the oesophagus, and the wound was closed along the greater part of its extent, but the patient unfortunately died some days later owing to the spread of infection into the surrounding tissues.

When the growth involves the greater part of the circumference of the oesophagus but has not spread beyond the outer coat, and is not more than 2 cm. in length, then it is possible not only to excise that portion of the tube with a margin of healthy tissue above and below, but also to bring the two cut ends into apposition and to suture them together. Leakage, however, is apt to occur, and therefore the outer wound should not be completely closed, so as to allow for drainage. It is most essential, however, to limit the spread of the discharge from the oesophagus into the wound; this can be done to a great extent by deep stitches, bringing into apposition the surrounding muscles, and covering, as far as possible, the carotid sheath by suturing the adjacent muscles over it. The escape of septic matter from the oesophagus may then be regulated to the track left open for it. Another precaution is the introduction of a Gluck's oesophageal tube into the oesophagus; the dilated upper end rests on the back of the tongue and catches most of the saliva that is swallowed; and also later, when the patient is taken off rectal feeds, the fluids swallowed are conveyed by the tube to a portion of the oesophagus well beyond the anastomosis. Apart from the actual technique in the removal of the affected portion of the oesophagus, the essentials to success are the thorough cleaning of the mouth and removal of carious teeth before the operation, the introduction of a Gluck's tube as soon as the anastomosis is complete, and the approximation of all the adjacent structures between the skin wound and the oesophagus so as to prevent the spread of infection among the tissues of the neck. In all cases, of course, in which an excision of the growth is effected the glands, whether obviously involved or not, must be dissected out.

Finally, we come to the last group of cases—those in which the ends of the oesophagus cannot be approximated after removal of the growth, and in which perhaps, also, a portion of the trachea has to be excised. As to the latter, all that need be said is that the lower end must be sutured into the wound and a tracheotomy tube tied in. Later the patient can learn to speak quite comfortably with a Gluck's phonation apparatus. The upper and lower ends of the divided oesophagus must also be drawn out and sutured to the skin; the patient can for the time be fed through the lower opening, and the secretions escaping from the upper end can be controlled by an oesophageal tube passed down the pharynx, out of the upper oesophageal opening and in again at the lower opening. By this means also the patient can enjoy the pleasure of swallowing his own food. Later a plastic operation can be undertaken to restore the continuity of the oesophagus. This is done by replacing the excised portion by a tube formed from the skin which lies between the two cut ends of the oesophagus. The skin is freed on either side and the edges rolled over and sewn together, so that the outer surface of the skin now forms the inner lining. The ends of the new tube are now united to the cut ends of the oesophagus, and the whole covered over by undercutting the skin on either side and stitching these flaps together over the raw surface.*

When the upper end of the divided oesophagus is so close to the pharynx that it cannot be brought out of the wound, then precautions must be taken to provide for the escape of the secretions in the same way as described in the operation of excision and end-to-end anastomosis.

* A very full account of plastic operations for restoring the continuity of the oesophagus can be found in Professor von Hacker's paper, Ueber Resection und Plastik am Halsabschnitt der Speise-röhre, insbesondere beim Carcinom, *Verhandlungen der deutschen Gesellschaft für Chirurgie*, Thirty-seventh Congress, Berlin, 1908.

ON THE RADICAL OPERATION FOR CANCER OF THE PYLORUS:

WITH ESPECIAL REFERENCE TO THE ADVANTAGES OF THE TWO-STAGE OPERATION AND TO THE QUESTION OF THE REMOVAL OF THE ASSOCIATED LYMPHATICS.*

BY

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The subject of the radical treatment of cancer of the stomach by surgical operation is one on which a great deal of work has recently been done. And yet, owing chiefly to the long delay which occurs before the cases are submitted to the surgeon, the immediate mortality is very high and the proportion of lasting cures is disappointingly low. It is my object to discuss the causes and remedies for this state of affairs and to support the following propositions:

1. There is a good prospect of cure in early cases of the disease.

2. That exploratory operations should be performed for diagnostic purposes in all doubtful cases.

3. That the immediate operative mortality may be greatly reduced by operating in two stages.

4. That a more systematic attempt should be made to remove the whole of the lymphatic area connected with the stomach.

5. That the limits of operability, both for palliative and radical operations, should be more rigidly defined, so as to lessen if possible the number of surgical failures.

The following table shows the chief features of the cases upon which I have myself operated:

Order.	Sex.	Age.	Length of History.	Pain.	Vomit.	Emaciation.	Tumour	Free HCl.	Operation.	Interval.	Result.	Remarks.
1	M.	57	8 mnths.	+	+	+	–	–	Billroth I	—	D.	Died on third day, probably from leakage.
2	F.	56	12 mnths.	+	+	+	+		Two stage	7 days	R.	Lived for seven months and then died of uraemia.
3	M.	66	9 mnths.	+	+	+	?	–	Two stage	7 days	R.	Died of recurrence nineteen months later.
4	M.	55	5 years	+	+	+	?	–	Two stage	12 days	R.	Alive and well now after two and a half years; a very early cancer growing in a chronic ulcer.
5	M.	32	2 mnths.	+	+	?	?	+	Two stage	10 days	R.	Alive and well now one and a half years after operation.
6	F.	38	4½ mnths.	+	+	+	+	+	Billroth II	—	D.	Died seventeen days after of asthenia.
7	M.	54	12 mnths.	+	+	+	+	–	Two stage	12 days	D.	Died of shock two hours after the operation.
8	M.	49	3 mnths.	+	+	+	–	–	Two stage	30 days	R	Alive and well (three months).

It will be noted that of these cases 6 were men and 2 women, and that the ages varied between 32 and 66. In 6 cases I operated in two stages with only one death, whereas in the two cases in which excision and anastomosis were done at the same time both died. Other points which require further notice can be more conveniently discussed under the various headings into which the subject naturally divides itself.

* Part of a paper read before the Surgical Section of the Royal Society of Medicine on February 8th.

ETIOLOGY.

The only determining factor of importance of which we know anything is the pre-existence of an ulcer. In one of my cases (No. 4) this factor was present, and I was fortunate enough to time my operation at the very earliest stage of malignant transformation. Judged from a clinical point of view about 12 per cent. of all cases of cancer of the stomach are caused by an ulcer (Stumpf,[3] 6 out of 47 cases). But according to Wilson and MacCarty[49] there is strong pathological evidence for associating the pre-existence of an ulcer with cancer of the stomach in nearly 80 per cent. (125 out of 158 cases of growths of the pylorus resected by the brothers Mayo).

SYMPTOMS, SIGNS, AND DIAGNOSIS.

In cases which are presented for surgical treatment the symptoms have usually been present for many months. In my cases, apart from the one preceded by an ulcer, the duration was 2, 3, 4½, 8, 9, 12, and 12 months, with an average of about 7. It is quite clear that in most cases a most unreasonable delay occurs before the surgeon is consulted, and that this delay must often involve the growth becoming unfavourable for radical treatment.

It will be seen from the table that in my cases the cardinal symptoms of loss of flesh, vomiting, and pain were never absent. Of these, emaciation is probably the most important, the loss occurring so rapidly, and being so unamenable to treatment. In any doubtful case, a steady gaining of weight is in my opinion the only condition that renders a postponement of an exploratory operation justifiable. Makkas,[1] in speaking of over 600 cases of cancer of the stomach, states that this sign of emaciation never failed.

The Occurrence of a Tumour.

In only 3 out of my 8 cases was a definite tumour constantly present. In one case a tumour was sometimes present and sometimes absent; in 2 cases there was a sense of resistance, and in 2 there was nothing abnormal palpable. The proportion of operable cases in which a tumour is present is, according to various authors, 51 per cent. (Stumpf[2]), 79 per cent. (Makkas,[1] 132 out of 167), or 70 per cent. (Mizokuchi,[3] 43 out of 61). It must therefore be most emphatically stated that no case can be diagnosed as non-malignant because of the absence of tumour, and, on the other hand, that no case should be regarded as inoperable simply because a tumour is present. There may be four quite different constituent elements in a stomach tumour, namely (1) A contracted rectus muscle; (2) a tonic contraction of the pylorus and antrum pylori, or of the whole stomach; (3) a mass of new growth or inflammatory tissue in the stomach; (4) an invasion of the parts round the stomach by new growth, especially the parietes and peritoneum. The fact that a stomach tumour may be formed by tonic contraction in the neighbourhood of an ulcer or new growth has not, I think, been sufficiently appreciated. A tumour which is movable and variable in consistency is favourable for operation, whilst a fixed nodular mass is the reverse.

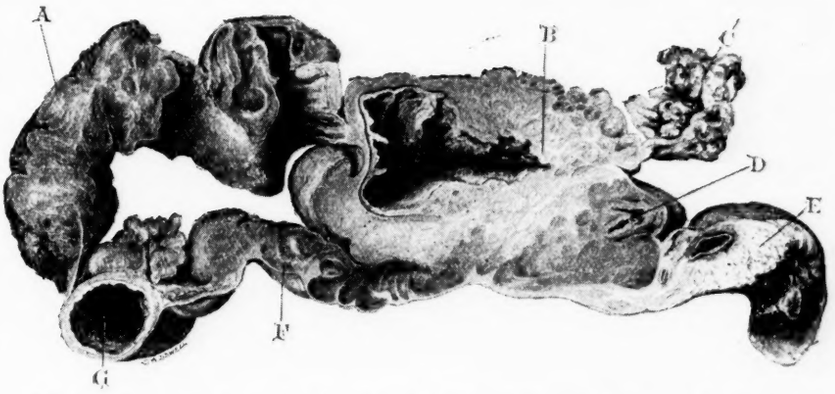

Fig. 1.—A, Great omentum. B, Primary growth in lesser curvature of stomach. C, Gastro-hepatic omentum. D, Duodenum. E, Pancreas. F, Transverse mesocolon. G, Transverse colon.

Chemical Changes in the Stomach Contents.

All observers are practically agreed now that the absence of free HCl and the presence of fatty acids in the stomach contents should only be regarded as of importance as confirmatory evidence. Of the 7 among my cases in which these tests were applied free HCl was absent in 5 and lactic acid present in 3.

Diagnosis.

The important point in the diagnosis of cancer of the stomach is the early recognition of the possibility of malignancy. Of course, if one waits long enough almost every case will reveal its own nature sooner or later. It should be enough for us to know that, in any given case of dyspepsia, emaciation is taking place steadily to make us suspect organic disease of the stomach, and advise an exploratory operation, unless the symptoms definitely improve under medical treatment. When this exploration is made, however, the difficulties are often not at an end. In my fourth case I actually removed a piece of pyloric growth after doing a gastro-enterostomy, and the microscope proved this to be inflammatory. But I was not satisfied, and having explained the situation to the patient, I excised the pylorus a fortnight later, and at the back of it was found the early stages of cancer. Wilson and MacCarty's[49] paper, already referred to, gives many illustrations of specimens which showed only inflammatory tissue in one part and malignant in another. Cases are often subjected to resection under the impression that they are malignant, and the microscope shows nothing but inflammatory tissue—for example, Frazier,[6] Taylor.[7] On the other hand, it often happens that a hard mass is regarded as malignant and inoperable and a gastro-enterostomy done for mere palliation, and the patient, instead of dying, gets quite well and lives for years, to prove that the mass must have been inflammatory—for example, Lilienthal,[8] Wolfler,[9] Patterson,[10] Kindle.[11]

The mere disappearance or diminution of a tumour of the pylorus after gastro-enterostomy cannot be held to be proof of its benignity, because, as in my fourth case, the mass may be composed of much inflammatory and little malignant tissue. The former disappears and leaves the latter as a cancerous germ to fructify later. Dowd[12] relates such a case—a young man in whom at a second operation after a gastro-enterostomy the pyloric tumour had apparently disappeared, and nothing further was done; but eighteen months later the patient died of peritonitis due to perforation of a malignant growth of the stomach.

The practical deduction from this great difficulty in the distinction between inflammatory and malignant disease of the stomach seems to me to be this: Every case should be submitted to no more than gastro-enterostomy in the first place. The abdomen is opened again in from two to four weeks, and if there is still any nodular mass it should be excised. If, on the other hand, the mass has entirely disappeared, it is probably benign, but the case should be kept under observation for the next twelve months.

OPERATIVE TREATMENT.

Before discussing the value and scope of the two-stage method, it may be well to give an idea of the results of the three classical operations. This is given in a large series of figures collected by Goldschwend[16] as follows:

Method.	No. of Authors.	No. of Cases.	Deaths.	Percentage.
Billroth I ...	11	279	102	36
Billroth II ...	9	189	77	40
Kocher	3	54	14	26
All methods ...	13	553	229	51

It is probably not fair to argue from these figures that Kocher's operation, in which an end-to-side junction of

duodenum to stomach is effected, is much safer than the others, for it has been employed for cases of early growth, and is not applicable to advanced disease. The main point proved by these figures is that even in the hands of experienced operators the mortality of the operations for resection of cancer of the stomach is about 50 per cent.

The reason for this high death-rate is easy to understand. The patients are often of advanced age; they are reduced to a condition of marasmus by pyloric stenosis. The stomach itself is in a most unhealthy condition, because it is the seat of a cancerous mass, and also because its contents are stagnant and decomposing. Is it any wonder, then, that an extensive resection followed by an anastomosis should result either in fatal shock, or that the patients should have too little recuperative power to resist peritonitis or other post-operative sequel?

I have been able to collect 127 cases in which the cause of death after resection operations is given. They are from the following authors, namely: Goldschwend,[16] Rasumowski,[23] Müller,[24] Branham,[25] Frazier,[6] Bishop,[26] Brunner,[27] Garré,[28] Kronlein,[29] Steinthal,[30] Czerny,[31] Korte,[32] Graham,[33] Makkas,[1] and Mizokuchi.[3] Placing these together, the causes of death are as follows:

	Cases.
Peritonitis (including "leakage" or "leaking from the duodenal stump")	79
Shock, Heart failure, Collapse, Weakness, Marasmus, Narcosis	23
Lung complications, especially pneumonia ...	20
Haemorrhage	2
Septic cholangitis ...	1
Brain symptoms	1
Colitis	1

For practical purposes, then, the causes of death are three: peritonitis, shock, and lung complications. It is certain that the danger of all these can be greatly lessened by dividing the operation into two stages. At the first stage gastro-enterostomy is performed. The patient rapidly gains in strength and vigour, and the stomach is relieved from its stagnation, whilst in many cases the inflammatory element of the tumour mass greatly diminishes. Then when, after an interval of one or two weeks, the resection is undertaken, the operation is much shorter, and, the patient's vitality being greater, there is much less danger of his succumbing either to peritonitis, shock, or to lung infection.

In my series of 8 cases, the whole operation was performed at one stage in 2, and both these patients died. In 6 cases the two-stage operation was performed, and of these only one died. I have been able to collect 12 other cases in which the two-stage operation was employed from the following authors: Franke[34] (1 case), Tuholski[35] (2 cases), Kammerer[36] (1 case), Tixier[37] (2 cases), Jaboulay[38] (1 case), Stumpf[2] (1 case), Robson[21] (1 case), and 3 other cases quoted by Mayo Robson.[21] Adding these to my own series, we have 18 cases, of which only 3 died—a mortality of only 16.6 per cent.

In addition to these definitely described cases, there are many authors who speak well of the method. Such are Quenu,[39] Doyen,[40] Czerny,[31] Hahn,[41] Kummel,[42] and Krause.[18] It will be noted that the interval between the two stages of the operation varies very much with different operators. In my own cases the intervals were seven, seven, ten, twelve, twelve, and twenty-eight days, and I am inclined to think that a fortnight represents the average time which ought to elapse between the two operations. In cases recorded by other surgeons, however, the interval has usually been much longer—generally about two months (fourteen days, six weeks, two months, ten weeks, three months). It seems to me that such a long interval is quite unnecessary, as patients gain in strength very rapidly after the gastro-enterostomy, and this long postponement gives time for the cancer to spread or to become disseminated, while the adhesions left after the first operation become often densely organized. Kammerer,[36] Krause,[18] and Tixier,[37] in particular, call attention to the difficulty caused by these adhesions. If the interval is only a fortnight these adhesions are easily broken down and do not add materially to the difficulty of the operation.

The Removal of the Lymph Area.

A pretty general agreement concerning the amount of the stomach and duodenum which should be removed has been arrived at. It should include the whole of the lesser curvature, or at least that part of it up to the point where the coronary artery and lymphatics join it, about a half or a third of the greater curvature, and about 1 in. of the duodenum.

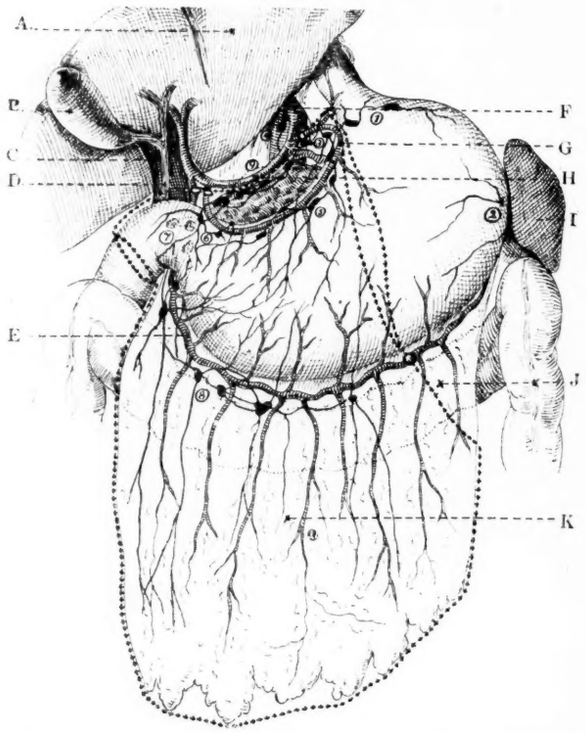

Fig. 2.—A, Liver. B, Gall bladder. C, Portal vein. D, Bile duct. E, Right gastro-epiploic artery. F, Coeliac axis. G, Coronary artery. H, Hepatic artery. I, Spleen. J, Colon. K, Great omentum. Lymph glands: 1, Paracardial; 2, splenic; 3, upper coronary; 4, coeliac; 5, lower coronary; 6, suprapyloric; 7, subpyloric; 8, gastro-epiploic; 9, suprapancreatic.

But in connexion with the removal of the lymphatic area associated with the stomach there has hitherto been no definite plan at all comparable, for example, with that adopted in cancer of the breast. So far all that has been done and advised is the removal of the lymph glands connected with the stomach along its lesser and greater curves, together with certain glands on the anterior face of the pancreas. But it is obvious that this by no means includes all the lymph channels which lie in the path of what Sampson Handley calls lymphatic permeation. The largest lymph-bearing area connected with the stomach is in the great omentum, and from this the lymph vessels loop back in front of the transverse colon, above the transverse mesocolon to the peritoneum in front of the pancreas, ending in the lymph glands round the coeliac axis. Before discussing the possibility of the removal of this wide area of peritoneum it may be well to give some evidence that cancer cells do really travel thus along the tissues named. Dobson and Jamieson[50] have recently made preparations showing the lymphatics connected with the stomach. I have shown the chief gland groups which they describe in Fig. 2. They state that the glands associated with the hepatic artery lie along its gastro-duodenal branch, whilst a chain of four to seven glands are associated with the right gastro-epiploic artery, lying below the vessel and having a tendency to stray down between the layers of the great omentum, especially in the case of adults. These never extend to the left of the middle of the great curve, and their efferent vessels all end in the subpyloric glands. It is also noted that some of the lymph vessels from the pylorus are not connected with the lower coronary glands, but go direct to the glands which lie below the origin of the coronary artery. Lymph vessels from the great curvature run into the great omentum, and finally looping back, end in the gastro-epiploic groups. Lengermann[51] found in cases of gastric cancer the following involvement of glands: coronary in 50 per cent.; glands on the great curve 37 per cent.; and subpyloric groups in 60 per cent.

Fig. 1 is the drawing of a slice taken from the tissues of an old woman who was admitted to the General Hospital

with enormous ascites, and who died very soon after this had been tapped. She had advanced colloid carcinoma of the stomach, which had extended widely in the peritoneal tissues. This diffuse growth had spread itself in no disorderly fashion, but in the definite planes provided by the lymphatic areas of the omenta. A continuous mass of growth could be traced from the stomach, up the gastro-hepatic omentum, and down the great omentum, when it turned back in front of the colon, which was not involved, along the upper surface of the transverse mesocolon to the tissues in front of the pancreas. Further, the free margin of the great omentum was adherent in the pelvis, and from this point an exuberant mass of growth extended over the whole of the pelvic floor. It is clear, then, that in this case the whole of the great omentum had become permeated with the cancer, and had served as a carrier of cancer cells to the pelvis.

It may be objected that this was a case of such advanced disease that no inference can be drawn from it relating to the early stages of cancer dissemination. But I have been able to demonstrate the same process in a much earlier stage of the disease.

In my seventh case, on beginning the removal of the tumour one week after a posterior gastro-enterostomy, I was surprised to find that the edge of the great omentum was adherent somewhere in the right iliac fossa. This adhesion had not been noticed at the time of the first operation. A very little manipulation served to separate the adherent parts, and it was noted that the point to which the omentum was fixed was at the root of the mesentery adjacent to the ileo-caecal region. The actual point of the omental edge thus separated was apparently thickened and inflamed. After the patient's death the point on the mesentery from which the omentum was separated could be identified as an injected area. Both these tissues (the tip of the omentum and the mesentery) showed unmistakable cancerous infiltration. And this malignant growth at the extremity of the mesentery involving the tissues at the pelvic brim existed with an omentum which otherwise appeared perfectly free from disease. I would venture, therefore, to assert that these cases, confirming as they do what we should expect of the lymphatic areas connected with stomach cancer, prove that the whole of the great omentum ought to be removed in every radical operation.

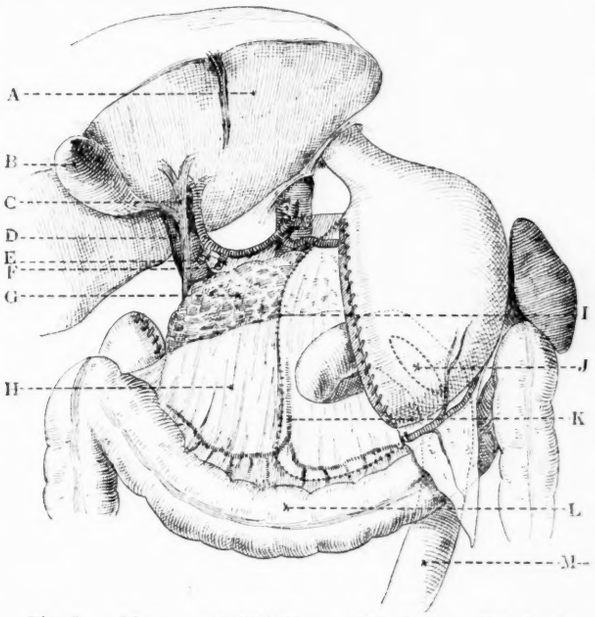

Fig. 3.—A, Liver. B, Gall bladder. C, Bile duct. D, Portal vein. E, Gastro-duodenal artery. F, Pyloric artery. G, Pancreas. H, Mesocolon. I, Cut edge of peritoneum. J, Gastro-enterostomy. K, Middle colic artery. L, Colon. M, Jejunum.

In confirmation of the suggestion that cancer spreads in this area from the stomach through the great omentum to the pelvic organs, it may be noted that among the scanty records we possess of the condition of patients dying from recurrence of the growth after operation, there are several instances of the recurrence taking place in the pelvis. Goldschwend[16] mentions the case of a woman who died forty-one months after resection of the stomach of malignant disease of the ovary. Makkas' relates two cases, one a woman of 39 the other a woman of 40, who died of recurrence in the ovary or pelvis. Goullioud[45] had a female patient who died seventeen months after partial gastrectomy of cancer of the ovary.

If it is admitted that the great omentum ought to be removed, this is easily carried out by cutting through the peritoneum, which passes from the back of the omentum to the front of the transverse colon. And in many cases it is then possible to strip the peritoneum off the upper surface of the transverse mesocolon to the front of the pancreas.

The complete removal of the small omentum is fortunately not so important, because it has far fewer lymph vessels than the great omentum. It cannot of course be entirely removed, because it is wrapped round the portal vein, bile duct, and hepatic artery. The lymph vessels from the upper margin of the stomach run in company with the gastro-duodenal and hepatic arteries on the one side, and with the coronary artery on the other, behind the peritoneum which covers the pancreas at the back of the lesser sac of peritoneum. This is the same layer of peritoneum which is continuous with the posterior layer of the great omentum, and it may be removed with it. The coronary artery should be tied as it comes off from the coeliac axis, the gastro-duodenal as it comes off from the hepatic.

The operation which embodies these suggestions I have carried out in my last two cases. It is illustrated by Figs. 2, 3, and 4. In Fig. 2 the stomach and great omentum, with chief vessels and lymphatics, is shown, and the lines of incision indicated by a dotted line. Fig. 3 shows the condition after the removal of parts of the stomach and duodenum, great omentum, and the peritoneum from the front of the head of the pancreas. Fig. 4 shows, by means of a diagrammatic sagittal section, the line along which the peritoneum attached to the stomach is removed.

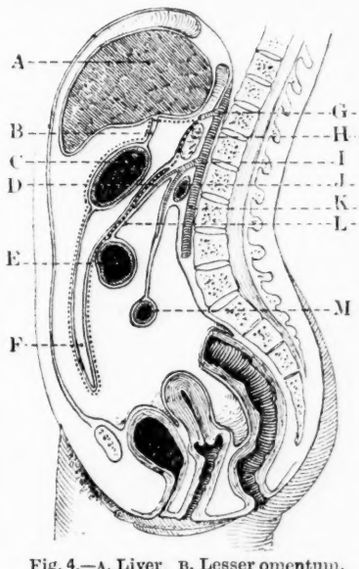

Fig. 4.—A, Liver B, Lesser omentum. C, Stomach. D, Middle colic artery. E, Transverse colon. F, Great omentum. G, Coeliac axis. H, Pancreas. I, Superior mesenteric artery. J, Duodenum. K, Aorta. L, Transverse mesocolon. M, Small intestine. Dotted line shows area of peritoneum removed with the stomach.

As regards the ultimate results of operations for the radical cure of cancer of the stomach, the figures of Goldschwend,[16] Clairmont,[46] Makkas,[1] Kindle,[11] v. Eiselsberg,[46] Mikulicz,[46] Caspersohn,[46] give ample information. If added together the result is as follows:

Out of 736 cases submitted to resection, 56 only were known to be alive and well at the end of three years (7.6 per cent.).

Out of 237 cases recovering from resection, 37 were alive and well at the end of three years (15.6 per cent.).

Such results evidently prove that there is great room for improvement in the thoroughness with which the radical operations are performed, and it may be that such improvement lies in the direction which I have above indicated.

CONCLUSION.

In conclusion, the opinions discussed above may be summarized as follows:

1. That a quite unreasonable time is usually allowed to elapse before the patient is presented for surgical treatment.

2. That in the majority of cases the diagnosis is to be made from the cardinal symptoms of loss of weight, vomiting, and pain.

3. That all doubtful cases should be submitted to exploratory operation, unless the body weight rises under medical treatment.

4. That even exploratory operations often leave the diagnosis doubtful. In such circumstances the case should be seen at frequent intervals or else treated by excision.

5. Mortality after resection of cancer of the stomach is about 50 per cent. This is caused by peritonitis, shock, and lung complications.

6. The immediate mortality can be greatly reduced by adopting the two-stage method.

7. That mortality can be further much reduced by excluding cases where the colon, pancreas, or posterior lymph glands are seriously involved.

8. That the adequate removal of the associated lymph areas demands that the great omentum and the tissues in front of the pancreas should be taken away.

9. This can be done by the above-described operation.

10. Remote results of radical operations only give a percentage of 7.6 three-year recoveries of those operated upon. This low figure may in part be due to the inadequate removal of lymphatic tissues.

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FOREIGN BODIES IN THE DUODENUM.

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THE rarity of the impaction of foreign bodies in the duodenum makes it desirable that every case of this accident should be recorded.

History.

A girl, aged 3 years, was admitted into the Belgrave Hospital for Children on August 19th, 1909. Two days before admission the child, who had been very healthy previously, told her mother that she had swallowed a short piece of pencil with a metal extremity, such as is usually attached to a dance programme. The next day she began to suffer from sickness, diarrhoea, and colicky pain. As this continued, she was brought to the hospital, and admitted on the third day after the accident.

When put to bed the child appeared to be in no pain. The abdomen was not distended, and moved well with respiration. Slight tenderness was present to the right of the umbilicus. The diarrhoea soon ceased. When the child was examined by *x* rays on the day following admission a well-marked shadow, evidently the metal end of the pencil, was seen about 1½ in. from the middle line beneath the right costal margin. With the child lying on her back and the *x*-ray tube beneath her, the dark area appeared to descend fully an inch on deep inspiration. Every day the child was examined with *x* rays, but neither constipating food nor purges made any difference to the position of the shadow.

Operation: Recovery.

On September 1st, twelve days after admission, I decided to operate. An incision, 3½ in. long, was made above the umbilicus in the middle line. On introducing the hand into the abdomen the pencil was at once felt impacted across the gut just at the bend between the descending and transverse parts of the duodenum. It was easily disimpacted and pushed back into the stomach. An attempt was next made to pass a Brüning's foreign body forceps into the stomach, with which, aided by the hand in the laparotomy wound, it was hoped to seize the foreign body, and remove it by the oesophagus. Unfortunately, having no oesophagus tube with me, I was unable to pass the forceps down to the stomach, owing to their points catching in the mucous membrane of the gullet. The attempt was accordingly abandoned. A small incision was made through the anterior wall of the stomach on to the foreign body held between the fingers. The pencil at once shot out, and the small wound was closed by a double row of stitches. Through-and-through sutures closed the abdominal incision.

The wound healed in a satisfactory manner, and the child left the hospital on October 7th.

The pencil was found to be $1\frac{7}{8}$ in. long and $\frac{3}{16}$ in. in diameter. The point was not at all sharp.

When the fate of the various foreign bodies that are swallowed is considered, the rarity with which they give rise to any serious trouble during their passage through the alimentary canal must appear striking. Innumerable cases are recorded, both in children and in adults, in which the most varied assortment of miscellaneous articles have been successfully passed by the rectum. Thus Norton[1] describes a case in which a pin $3\frac{9}{16}$ in. long passed through the alimentary canal of a child aged 13 months in twenty-one hours, and Petit de la Villéon[2] another in which a pin 2 in. long, with a large head and sharp point, was passed by the rectum fifteen hours after it had been swallowed. A third example in which a child of 3 successfully disposed of a pin 3 in. in length is recorded by Silver.[3] Goodall[4] mentions a case in which a pocket-knife nearly 3 in. long traversed the alimentary canal of a child of 2 years in four days. Numerous examples of safety pins having been swallowed by infants without any harm resulting are to be found in the literature, and Holt[5] mentions a case in which an infant of 6 months managed to dispose of a mouthful of seven such pins, some open and some closed, without any evil consequences. Davis-Colley[6] describes how a needle 5 in. long only gave rise to trouble when the descending colon was reached, and Mansell Moullin[7] a case in which 4½ in. of hatpin travelled as far as the ileo-caecal valve in a girl of 19 before it became impacted.

Some interesting observations on the way in which the intestines deal with pointed foreign bodies are referred to by Ross[8]; he mentions the experiments of Müller and Exner, who have shown that in dogs the contact of any sharp pointed body with the mucous membrane of the bowel results in a corrugation of the intestinal wall, which tends to push away the offending body. This action is purely reflex, and occurs just as well after the nerves going to the segment of bowel under observation have been divided. Evidence of a similar action in man is seen in a case described by Kretz,[9] in which a chicken bone perforated the bowel, and numerous scars were seen in the mucous membrane proximal to the point of perforation.

But foreign bodies do occasionally become impacted even in the duodenum, though relatively few cases seem to have been described. Clement Lucas[10] relates a successful case which closely resembles the one here recorded. A child of 22 months swallowed a French nail 2 in. long, which was seen by the *x* rays in the situation of the second part of the duodenum. When it had remained in the same position for nearly a month Mr. Lucas decided to operate. He opened the abdomen, seized the nail through the duodenal wall, and cutting on to it, removed it. Laurence Jones[11] records a case under the care of Mr. Crisp English, in which a girl swallowed 2½ in. of a broken bodkin. For the first few days it appears to have remained in the stomach, but later on it passed through the pylorus, and twelve days after being swallowed the

sharp broken end pierced the second part of the duodenum and gave rise to acute symptoms. Lihotzky[12] mentions a most curious case, in which a spoon remained harmlessly in the stomach and duodenum for two and a half years, and only gave rise to perforation of the latter when the anatomical relations of the viscera became disturbed by the occurrence of pregnancy. Last of all, we have Chaput's[13] case in which a tooth plate was swallowed and became impacted in the third part of the duodenum, its onward progress being blocked by the pressure exerted on the gut by the superior mesenteric vessels and the ligament of Treitz. After ten days an attempt was made to remove the foreign body through an opening in the commencement of the jejunum. But the tooth-plate was firmly fixed in the bowel by its metal points, which had deeply penetrated the wall, and not until the incision was prolonged upward to the duodenum could it be removed. Although some difficulty was experienced in suturing the bowel the patient did well.

It seems not a little curious that elongated foreign bodies do not more frequently become impacted in a bent tube like the duodenum. The screen examination in the case here recorded seems to indicate that the duodenum of children is more movable than might be imagined, and it is probable that this part of the bowel is capable of considerable dilatation. Again, the observations of Müller and Exner serve to show that a curved and pointed body will be rotated by the bowel into such a position that it will pass most easily. In this way, perhaps, may be explained the numerous cases in which, especially in children, a foreign body of considerable length has passed through the duodenum without giving rise to trouble.

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THE EXISTENCE OF LIVING CREATURES IN THE STOMACH AS A CAUSE OF CHRONIC DYSPEPSIA.

BY W. SOLTAU FENWICK, M.D.

THE frequent occurrence of entozoa in the human subject is probably responsible for the superstitions current through many centuries regarding the occasional harbourage in the stomach of various strange animals, which, subsisting upon the food of their host, or even upon the structures of the viscera, gave rise to a series of weird symptoms that usually terminated in an agonizing death. Such stories have not only obtained credence among all classes of the population throughout the entire world, but have frequently been recorded and commented upon by members of the medical profession, many of whom appear to have been genuinely convinced that the animals shown to them had actually escaped from the body. So many of these fables were obviously the outcome of gross superstition, hysteria, or of a deliberate intention to defraud, that it is, perhaps, hardly surprising that modern writers on diseases of the digestive system either ignore the subject altogether or only briefly mention accidental parasitism. Nevertheless, instances are still recorded from time to time in medical journals in which some unusual inhabitant of the human body has been observed by credible witnesses. With some little trouble more than 180 cases may be collected in which lizards, salamanders, frogs, slugs, caterpillars, worms, leeches, beetles, larvae, chrysalides, or maggots, were believed to have been harboured in the digestive tract for a considerable time and accompanied by an intractable form of dyspepsia. Some of these are so well authenticated that the subject certainly merits more attention than has hitherto been accorded to it.

INSECTS.

A large number of different insects or their larvae have been observed as accidental inhabitants of the human body, and in the early part of last century Hope published a list of some forty-three varieties which had been identified. Since that time numerous other cases have been recorded, and there is now little difficulty in collecting a hundred and thirty examples of myiasis or diseases caused by the presence of insects. In the vast majority, where sufficient details are given to permit of their identification, the insects belonged to three of the fifteen natural orders—the Diptera or two-winged flies, the Coleoptera or beetles, or the Lepidoptera, or butterflies and moths—and it is with the various species belonging to these three orders that the following remarks are chiefly concerned.

1. *Diptera.*

Of the numerous families of this order, the Muscidae, which include the house-flies, blow-flies, flesh-flies, and flower-flies, contribute the greatest number of parasitic larvae. The eggs of these insects are usually deposited in places where an abundance of food is obtainable without the necessity of exertion, and consequently the resultant larvae constitute the lowest form of maggots, and possess no legs. A very short time may intervene between the deposition of the egg and the appearance of the larva. In the case of the blow-fly it does not exceed twenty-four hours. As a rule, the common house-fly (*Musca domestica*) lays her eggs upon various forms of cooked meats, sweets, or biscuits, while the bluebottle or blow-fly (*Musca vomitoria*) prefers high meat, game, or other kinds of animal food that are undergoing decomposition. In his description of the latter species, Wood remarks that the oval wire covers which are sold for the purpose of keeping blow-flies from meat are often useless, since, when the insect finds that she cannot gain direct access to the meat, she will rest on the top of the cover, and allow her eggs to drop through the meshes or the wire gauze. The flesh fly (*Musca carnaria*) proceeds in a different and more expeditious manner. In the case of the bluebottle and most other Muscidae the eggs have to be hatched after their deposition, but in this species they are hatched within the body of the parent and are deposited as maggots, each female producing about twenty thousand. It was to such insects that Linnaeus referred when he wrote the apparent paradox that three flies could eat an ox as fast as a lion. The flesh fly does not even wait until the meat has undergone incipient decomposition, or, perhaps, is able to detect signs of it before they become apparent to the human senses, since hosts of these minute larvae are often found upon birds and animals within two hours of their death.

Of the genus Anthomyia some species, such as the meat-fly (*Musca anthomyia*) particularly affect meat, while others feed on radishes, onions (*A. ceparum*), lettuces (*A. lactucae*), or cabbages (*A. brassicae*). Others, again, deposit their eggs in certain fruits, especially the raspberry and blackberry, each specimen of which when fully ripe may be found to contain a maggot. The number of eggs and larvae which are ingested by persons who devour garden and hedgerow fruit must be enormous.

In two apparently authentic cases (Lasalle, Sentex) larvae belonging to the family of Tipulidae or crane-flies were detected in the vomit and faeces. Of this, the best-known species is the *Tipula longicornis*, or daddy-long-legs, which deposits its eggs on the ground, whence they possibly gain access to the human stomach by means of unwashed vegetables and fruit. The grubs, which are tough-skinned and hard-headed, are well known to gardeners by the name of leather jackets. The larvae of other species live in rain or well water, in which they may often be detected as minute thread-like worms of scarlet colour that exhibit constant twisting movements. Occasionally the larvae of the drone-fly (*Eristalis tenax*) find their way into the stomach through the medium of water, although the muddy fluid favoured by these rat-tailed maggots can hardly be described as suitable for drinking purposes.

Drosophila larvae are sometimes ingested in sour milk (Hutton), and the well-known cheese mites (*Piophila casei*), which are probably quite harmless, need no description. Another dipterous insect that lays its eggs upon the surface of the water is the common gnat (*Culex pipiens*), and Allonneau has related an instance in which immense numbers of the eggs and larvae of gnats were vomited at intervals. The family of the Oestridae or bot-flies are parasitic in certain animals, the larvae of the

common bot-fly (*Gasterophilus equi*) infesting the stomach of the horse. Several cases have been recorded in tropical countries in which persons vomited or evacuated larvae of this species, while the one related by Cattle is of particular interest, since it occurred in an inhabitant of this country who was not concerned in tending domestic animals.

2. *Coleoptera.*

At least twenty-four varieties of beetles or their larvae have been identified in the vomit or evacuations of persons suffering from symptoms of gastro-intestinal irritation, and more than forty instances may be found recorded in the literature. In the great majority of the cases the insects apparently belonged either to the Staphylinidae or rove beetles, the Carabidae or ground beetles, or to the Blaptidae; among the latter the *Blaps mortisaga* is the most conspicuous example, its existence having been specially noted in nine instances. Sometimes many species of the same family or of different families were found in the same individual, mixed with dipterous larvae, spiders, millipedes, and entozoa. The eggs of many of these beetles are deposited upon the earth, although those of the *Tenebrio molitor* are usually found in corn mills and bakehouses, whence they probably find their way into the stomach with the flour or bread. All the larvae are of considerable size, those of the *Blaps mortisaga* often measuring 1½ in. in length; and since they are provided with very formidable feet and jaws, their existence in the stomach and intestines of their human host is usually productive of anything but comfort. If well supplied with food and warmth, the *Tenebrio molitor*, and perhaps other species, breed throughout the entire year—a fact that may help to explain the persistent evacuation of the insects in all stages of development, which was noted in the cases of Mary Riordan and others.

3. *Lepidoptera.*

Members of this order are less frequently parasitic in the human subject than the Diptera or Coleoptera. Caterpillars of the Noctuae have been evacuated alive in six instances; in four others, those of the *Mamestra brassicae*, or cabbage moth, which infests the summer cabbage, have been identified; while in one instance (Herold) the caterpillar of the large white butterfly (*Pieris brassicae*) has been found. In all, some twenty-two parasitic caterpillars, generally referred to as "hairy" or "smooth," have been observed; and Cavenne has recorded an instance in which chrysalides of butterflies were the cause of a severe gastro-enteritis. Finally, it may be mentioned that Bartels has observed internal parasitism by a member of the family of Pulicidae or fleas, and Ranque a case in which numerous woodlice were vomited.

Gastro-intestinal infection by dipterous insects is far more common in tropical countries than in England, owing to the greater number and variety of flies, and the custom of eating meat in a raw or partially cooked state. Even in this country, however, it is probable that the majority of people who enjoy cold game or stale cooked meats during the warm months of the year invariably swallow eggs, and even larvae, while those who indulge in garden fruits, raw cabbages, salads, onions, or radishes which have been carelessly cleaned, are also extremely prone to infection by the various Anthomyia, as well as by other insects that lay their eggs in these substances. It is stated that the eggs of the blow-fly have been found in the stools of healthy individuals, and it is probable that if a systematic investigation were undertaken the eggs and larvae of other forms would also often be detected. The habit of drinking unboiled water or water that has been exposed to the air for some time is responsible for infection by those species which usually lay their eggs on water; while such persons who drink the contents of pools, lakes, wells, or tanks, invite infection by a vast number of larvae. The fact that the rat-tailed grub of the drone-fly, which selects for its residence only the foulest water, has been found in the human stomach, is sufficient to indicate how widely opinions may differ concerning the exact definition of "drinking water." Cakes, biscuits, or sweets kept in cupboards are liable to be contaminated by many insects; and in a case related by Albrecht it was observed that the larvae in the boy's stools were identical with those that infested the cupboard where his favourite cakes were stored. A depraved appetite resulting from hysteria or mental disease seems to have been responsible for many examples of coleopterous larvae in women, although the fact that children are by no means exempt (Pickells) proves that accidental infection may sometimes occur, possibly through the medium of garden mould.

The clinical details of many of the cases of internal myiasis, while deficient in several important particulars, conclusively prove that under certain circumstances the eggs of insects are hatched in the human stomach, and the resultant larvae grow to their full size; while in rarer instances all the various metamorphoses which precede the development of the perfect insect may be completed in the organ. Thus, more than 45 cases have been recorded in which a vast number of maggots were evacuated as the result of the ingestion of insects' eggs, and in many of these the length of time which elapsed between the probable date of infection and the first discharge of living larvae corresponded with that required for the hatching of the eggs and the development of the maggots. In others, again, as in that related by Cavenne, the appearance in the stools of chrysalides suggests that the pupal as well as the larval stage was completed in the alimentary tract, while the case of Mary Riordan and others, in which larvae, pupae, and the perfect insects were discharged at intervals for years, can only be explained by the assumption that the insects actually multiplied in the digestive canal of their host.

These clinical observations are to some extent confirmed by the results of experiment. Thus, larvae of flies introduced into the stomachs of guinea-pigs and frogs have been found alive at the expiration of three days, and those of the blow-fly not only withstand prolonged immersion in water, but resist artificial peptic and pancreatic digestion for six or seven hours. The extraordinary vitality of many species of beetles, especially the Blaptidae, has frequently excited comment (Pickells), and even immersion in spirits of wine for several hours does not seem to affect the *Blaps mortisaga* (Wood).

It is quite certain, therefore, that not only do the eggs of dipterous and coleopterous insects frequently hatch in the human stomach, but that the larvae may remain alive in the organ sufficiently long to permit their escape into the more hospitable regions of the intestine. If these statements apply to the normal stomach, they become infinitely more forcible when the frequent occurrence of gastric subacidity is considered. It is well known that certain functional disorders of the nervous system, including neurasthenia, hysteria, and some forms of insanity, are not infrequently accompanied by a marked deficiency of hydrochloric acid in the gastric juice; and since all varieties of primary inflammation of the stomach produce a similar diminution of digestive activity, it is obvious that the gastritis which ensues from the presence of living animals must indirectly favour their longevity. It is also highly probable that the condition known as achylia gastrica, in which the stomach never secretes any acid, is far more common than is usually supposed, and consequently in many apparently healthy individuals the stomach may prove an excellent incubator for the development of any eggs that happen to gain entrance to it.

Symptoms.

The symptoms that ensue from the presence of larvae in the alimentary tract vary according to the numbers and nature of the parasite. In the case of the Muscidae, the passage of maggots by the rectum is often the first indication of the disease; but when larvae of the Oestridae, Tipulidae, or Coleoptera are present, their large size and sharp appendages always give rise to considerable irritation. An interval of four to twelve days usually intervenes between the ingestion of the eggs and the appearance of the first symptoms, during which time the patient either feels perfectly well or complains of vague abdominal discomfort, restlessness, and want of appetite.

At the end of this incubation period general malaise is experienced, accompanied by headache, thirst, anorexia, and faintness, while in children rigors, convulsions, and delirium are not infrequent. Extreme vertigo has been mentioned in so many cases that its occurrence cannot be regarded as purely accidental. Fever occurs in more than half the cases, and may persist for ten days or longer, although as a rule it tends to subside within forty-eight

hours. In several instances continued pyrexia for three weeks, accompanied by loose stools, caused the disease to be diagnosed as enteric fever. When dipterous larvae inhabit the intestine the abdominal symptoms are usually slight, and chiefly consist of distension, uneasiness, or of pinching and pricking sensations in the region of the navel; but if those of beetles, bot-flies, or crane-flies are present, severe tearing or gnawing pains are often complained of, or genuine colic is experienced. Retching and vomiting occur in the majority of the cases in which the latter larvae exist, and in more than one instance haematemesis has been observed.

The crisis of the complaint, which appears to coincide with the maturity of the larvae, is heralded by a sudden evacuation of the parasites, dipterous maggots being usually discharged by the bowel as well as by emesis, but beetle larvae chiefly by vomiting. Occasionally only a few specimens are eliminated at a time, but as a rule their numbers have been reckoned by the pint, quart, or litre, or are described as "innumerable."

It is interesting to notice that young children often suffer from general urticaria, especially when the caterpillars of certain moths have been swallowed. An evacuation of maggots is accompanied by a rapid subsidence of the former symptoms, with the exception of a mild diarrhoea which may persist for several days. In nearly two-thirds of the recorded cases, however, the symptoms recurred within fourteen days, and in about 40 per cent. of the entire number the patient continued to discharge larvae from the stomach or bowel for many months. In only two instances was mention made of the appearance of the fly in the stools or vomit, so it is probable that the apparent chronicity of the complaint depended upon a succession of distinct infections; but in cases of coleopterous parasitism, such as those recorded by Pickells, Ariel, Paterson, Bateman and others, the long continuance of the disease, which in Pickells's patient was still increasing in severity after three years, indicates that the insects must have multiplied within the body. Senator's case is of interest from the fact that while no maggots could be obtained by washing out the stomach, the patient vomited another dozen a month later. In only one instance was external myiasis associated with a discharge of larvae from the bowel. This was observed by Pout in 1787, and concerned a girl, aged 11, who was suffering from small-pox. On the ninth day of the disease she suddenly passed about half a pint of live maggots, and in all about three quarts were discharged. As the pustules burst each one was found to contain a similar maggot. Death ensued from exhaustion. The medical attendant appears to have been so surprised and perplexed by these abnormal features of small-pox that it is hardly possible to regard the case as anything but genuine. Emaciation, debility, and anaemia are usually present in chronic cases, and occasionally mention has been made of a depraved appetite, dyspnoea, difficulty of micturition, and dropsical effusions.

The general features presented by beetle parasitism are well exemplified by the case of Mary Riordan, which excited widespread interest during the third decade of last century and was so carefully watched by independent observers for the space of three years that even Cobbold admitted its genuineness. This young woman, who was highly neurotic and steeped in superstition, made it a practice for two years to remove clay from the graves of some priests of extreme sanctity and to mix it with her daily food. When first seen by Pickells she complained of severe gnawing and cramping pains in the abdomen, nausea, giddiness, and retching, and was subject to attacks of catalepsy. At intervals violent vomiting would occur, attended by the ejection of various larvae mixed with blood and mucus. In these attacks the patient would scream with pain and describe herself as suffering the tortures of hell, and was sometimes seized with epileptic convulsions. During the first year of her illness 700 larvae, most of which were alive, were vomited and about 100 passed by the bowel, while in the course of the next eighteen months nearly 1,300 were counted. Most of the larvae were identified as those of the *Blaps mortisaga*, or churchyard beetle, but in addition to these the meal-worm, or larva of the *Tenebrio molitor*, various dipterous maggots and intestinal parasites were observed. The majority of the larvae were full grown, those of the *Blaps mortisaga* measuring 1½ in. in length. When kept in boxes for observation they frequently devoured each other. Pupae as well as perfect insects were often seen, and on one occasion, when two beetles were vomited, the insects flew away. For three years and a quarter these parasites continued to increase in number, and the patient remained extremely ill and suffered from retention of urine, dropsy, and other symptoms. After numerous remedies had been tried in vain, the administration of 6 oz. of turpentine each day procured the discharge of immense numbers of larvae, pupae, and insects, after which the pain and vomiting subsided and the girl was restored to health.

In Ariel's case the patient vomited immense numbers of beetles during the course of two years, including 263 belonging to various species of Staphylinidae, among which were identified the *Ocypus olens*, or devil's coach horse, as well as numberless larvae of the *Tenebrio molitor* and of different species of Carabidae. This patient was cured by a mixture of turpentine and linseed oil. Osiander's case, to which reference has already been made, vomited and passed by the bowel numerous spiders, millipedes, flies, larvae, and worms. Colter relates that a Kaffir girl, 18 years of age, after suffering for a considerable time from abdominal pains, vertigo, and loss of flesh, vomited every few days a specimen of the "dunghill beetle"; while in the cases recorded by Jessop, Rosenstein, and others, living larvae of various beetles were either vomited or evacuated.

Very little is known concerning the phenomena that accompany parasitism by lepidopterous larvae, most writers being content to refer the symptoms exhibited by their respective cases to gastritis or enteritis. In the case described by Waters a child was seized with high fever, delirium, general urticaria, and acute gastritis, all of which symptoms subsided after a hairy caterpillar 1½ in. in length had been expelled from the bowel.

TREATMENT.

Accidental parasitism would probably be prevented if sufficient care were taken to protect meat and other articles of diet from the access of flies, and to avoid uncooked vegetables, musty cakes, and unboiled water. Muslin safes are alone of any value in protecting meat from the blow-fly. In mild cases of internal myiasis a sharp purge is often sufficient to rid the intestines of larvae and eggs, while in the more troublesome forms of the complaint the administration of thymol, santonine, or other anthelmintics, often appears to be successful. Beetles are, however, notoriously difficult to kill, and it was only by enormous doses of turpentine that Pickells and Ariel were able to rid their patients of these pests. With the exception of three doubtful cases death never occurred.

SLUGS.

The garden slug has long been credited with the power of living in the human stomach for a considerable time (Trümpy). Most of the cases, however, which are supposed to support this contention are extremely doubtful, although the following instance, reported by Dickman in 1859, presents certain features of interest:

> This patient was a girl, 12 years of age, who was in the habit of devouring raw vegetables in the garden. For two months she had complained of nausea and discomfort after meals, and on August 5th of that year vomited a large and active garden slug. The following day two more were vomited, and on the 7th no fewer than five of different sizes. On August 9th she suddenly exclaimed that something was crawling up her throat, and was seized with violent choking and retching, at the same time making frantic efforts to extract the animal with her fingers. A mixture of ammonia and camphor gave immediate relief, and after free purgation the symptoms disappeared.

Dickman considered that the child had probably swallowed the slugs when they were very small. In 1865 Dalton discussed the question whether slugs could live in the stomach in the light of certain experiments. He stated that when small slugs are carefully introduced into the stomachs of dogs they are always found to be dead when the animal is examined after a short interval, and that if kept in water at a temperature of 70° F. they invariably succumb within twenty-four hours. My own observations indicate that garden slugs rapidly die when placed in water at the temperature of the human body, although large ones may live for several hours in a moist chamber at a temperature of 99° F. On the other hand, immersion in the filtered contents of a healthy human stomach which

possesses the normal degree of acidity is attended by an immediate coagulation of their mucilaginous envelope and death within a few minutes. It can only be assumed, therefore, that if Dickman's observations were correct, the patient's stomach was either devoid of acid secretion or the slugs had never penetrated further than the oesophagus.

Rhind's case, in which a common grey slug, 4 in. in length, is stated to have lived in the stomach for eighteen months, and to have survived five days after being vomited, seems to have been similar to many others where hysterical women added slugs to their vomit or excreta in the hope of exciting notoriety or compassion.

LIZARDS.

In 1834 Luroth published the case of a woman, aged 28, who, after suffering for a long time from gastralgia and other symptoms of indigestion, was attacked by severe colic, and voided a lizard 3 in. in length, after which her former troubles disappeared. In David's case the patient, who had attained the age of 60, was cured of a severe gastritis by vomiting a lizard; while in that related by Spence the animal voided by the bowel was sufficiently agile after its long incarceration to defy all efforts to capture it. In these, as in other instances (Bernstein, Pingault, Hirzl), the sole evidence of the phenomenon appears to have rested upon the statements of the patient, and the evacuation of the reptile was not observed by any independent witness. There is consequently no reason to believe that the lizards had ever inhabited the alimentary tract.

WORMS.

Garden worms are frequently brought to medical men with the story that they had been vomited or passed with the stools. Several instances have been recorded (Eyting, Fermaud) in which the deliberate ingestion of such worms was followed by severe inflammation of the stomach and bowels, but there is no evidence that they remained alive for any length of time after being swallowed.

LEECHES.

In former years, when leeches were constantly employed in medical practice, many instances were recorded in which they were accidentally swallowed, with serious results, and in a medical treatise published in 1835 it is stated that when leeches gain access to the stomach they grow to an immense size and occasion severe losses of blood. Spence claimed to have removed from the throat of a man a leech which had caused spitting of blood for two months; Dumas relates an example of acute gastritis due to a leech in the stomach; Marques one in which repeated haematemesis occurred during the course of twenty-one days from the same cause; and Wanderbach a somewhat similar instance. There does not seem to be any reason why a leech should not enjoy a comfortable existence in the human stomach if it is not subjected to the normal percentage of free hydrochloric acid, but whether it would be capable of sucking blood from its host for an indefinite period is open to question. It is comforting to know, however, that the administration of a strong solution of salt is a certain means of destroying such an unwelcome parasite.

AMPHIBIOUS ANIMALS.

The popular belief that the stomach always contains fluid may possibly account for the superstition that certain amphibia, such as frogs and salamanders, are able to pass a prolonged existence in the human body. At least four cases have been recorded in which the presence of living frogs appears to have been honestly regarded by doctors as the cause of gastric disturbance (Ille, Sander, v. Wiebers, Weiss). In two of these only one frog seems to have existed, but Sander's case was remarkable from the fact that no fewer than nine frogs were vomited. In every instance the patient was a woman who had experienced colicky pains, flatulence, nausea, and loss of flesh for some time previous to the appearance of the animal.

Aquatic salamanders as occasional inhabitants of the human body have been recorded by Linckius and others, but it would appear that in every case the reptile had been intentionally swallowed. Berthold has specially investigated the question of living amphibia in the human stomach, and in two cases was able to demonstrate the existence of flies and other insects in the stomachs of reptiles which were stated to have been vomited after a prolonged residence in the patient's body; while a salamander which was supposed to have been vomited by a girl rapidly succumbed when placed in water at a temperature of 65° F. This observer also found that frog spawn, tadpoles, edible frogs, and salamanders were unable to exist when the water in which they lived was raised to a temperature of 65° F.

On the other hand, at least two cases have been recorded which suggest that amphibia are able to resist a much higher temperature than Berthold was inclined to admit. Thus, an insane woman under the care of Bremser, believing that the bite of the reptile was always fatal, attempted to commit suicide by swallowing a small toad which she had carefully wrapped up in a piece of mesentery obtained from the butcher's shop No symptoms of interest developed for several hours, but in the course of the evening she complained of nausea and oppression at the chest, and finally vomited the toad, which was quite alive but had both its hind legs broken. Colin's patient, who swallowed a salamander, vomited the animal alive after the lapse of nearly sixty hours.

With regard to the question of food, it is probable that the smaller amphibia and reptilia are able to accommodate themselves to circumstances to a much greater degree than is usually believed. As an instance of this I may mention that some lizards which a friend and I had captured in the summer were threatened by starvation during a severe winter, but were eventually saved by a diet of milk, which they soon learned to drink out of a dish placed in their cage.

Although there is no reason to believe that amphibia ever enjoy a prolonged existence in the digestive tract, or that spawn accidentally swallowed can develop into tadpoles, it does not appear improbable that a small frog, if uninjured in transit, might be vomited alive after several hours' residence in the stomach.

With regard to the cases in which live fresh-water shrimps are stated to have been discovered in the evacuations (Banon, Troschel, Wright), I have never known these crustacea live more than thirty seconds when placed in water at a temperature of the human body.

SNAKES.

The only carefully attested instance of a snake living for more than a few hours after being swallowed is that recorded by Mandt. The subject of this incident was a Russian peasant who, when sleeping in a forest, was awakened by the sensation of something passing down his throat. On examination, a rounded body could easily be felt moving about in the stomach, and a loud bruit was audible through the stethoscope. In spite of vigorous medicinal treatment the movements did not cease until the third day, and nearly a fortnight elapsed before a viper, measuring 12 in. in length, was expelled from the bowel. The reptile belonged to a species the bite of which excited inflammation but was not fatal.

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A CASE OF INTUSSUSCEPTION OF THE TRANSVERSE COLON IN AN ADULT.

BY

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THE patient in the following case, a coloured man aged 45, came under my care on the evening of September 26th, 1909. He had had severe pain in the epigastrium, vomiting and diarrhoea for some thirty hours. Some twenty-four hours earlier still he had lifted a weight of 50 lb. with the right hand alone, but he was accustomed to lift much heavier weights, and remained in his ordinary health until the next morning. He was then on board a small sailing boat, and at 9 a.m. felt a sudden sharp pain in the right side, and an inclination to go to stool. The motion was easy and normal, but he had to lean in a strained position during the act of defaecation, the boat being under full sail and rocking a great deal. After the motion the pain in the right side became very much worse and doubled him up, and at this juncture he vomited the sugar-cane and pupa seeds which had been part of his last meal. He vomited again twice in the next two hours—green material. On getting ashore, about 11.30 a.m., the pain was less severe, and he walked half a mile to his home, though with difficulty. He drank a little sugar and water, and this was immediately rejected. Vomiting continued at intervals during the night, but no bad-smelling material. The following morning—that of the day on which I saw him—he was carried on board a boat to be brought to me. At 9 a.m. he passed about a pint of dark red clotted blood, and at the same time vomited material which smelt like bad eggs. This was repeated ten or twelve times, and he passed more blood by the bowel on four or five occasions.

Previous History.

For about twelve years he suffered from constipation on sea voyages, lasting often for eight days. The bowels never moved when at sea. Since 1902 the bowels had moved daily.

State on Examination.

He was a tall, spare man, but well developed. He was twisting about in bed, and complained of severe pain in the right hypochondrium. His face was pinched and drawn, breathing entirely thoracic; pulse 90, was full and regular; his temperature was not raised. He complained of great thirst, very severe pain in the abdomen, a feeling of sickness, and was quite worn out by the excessive vomiting. The mouth was parched, tongue coated with a thick brown fur, lips pale and drawn, and the breath was most offensive. The abdomen was retracted with scarcely any movement—with a slight fullness in the region of the pylorus; no peristalsis was detected; there was general tenderness over the abdomen, but this was especially marked over the swollen area. The abdominal muscles were contracted but not quite rigid; no tumour could be palpated. The abdomen yielded a tympanitic note all over, including the tender area. There was no enlargement of liver or spleen, and nothing was made out per rectum.

Diagnosis.

In view of these symptoms and the definite history of faecal vomiting, a diagnosis of obstruction in some part of the bowel was made.

Treatment.

He was given soap and water enema, two pints in fifteen minutes. This was returned, along with a little thin, dark-coloured blood; no clots. Sips of water were ordered, and the patient given liq. morph. 43 minims every two hours till the pain was relieved; this was after four doses.

September 27th. The next day another soap and water enema was administered, two and a half pints; it was returned with a little dark blood.

September 28th. Turpentine and starch enema, two pints, brought away a few small hard masses of faeces and a little flatus, which relieved the patient considerably.

September 29th. Patient was given calomel, ½ grain, in the morning, and again ½ grain in the evening.

September 30th. Calomel, ½ grain, was given at 6 a.m. At 11 a.m. the patient had a good motion, which was quite natural and formed. He was then allowed a little milk and water and albumen water; up till this he had taken nothing but water. He had another natural motion in the evening, and continued the calomel, ½ grain morning and evening during the following day the bowels being moved twice, morning and evening.

Result.

In the afternoon of October 2nd, at 3 o'clock, the patient felt something move at the painful spot, accompanied by a shooting pain and a "feeling of hollowness." He had a motion between 4 and 5 o'clock, which he passed with great difficulty. His friends noticed that he had passed a piece of bowel, and sent me a most urgent message to come at once. I found the patient much alarmed but considerably better, and was able to reassure him that everything was all right. This prognosis proved justified, for after this day the patient's recovery was steady. I ceased attendance on October 26th, but have since heard that there has been no recurrence of any symptom.

The piece of bowel passed proved to be the transverse colon. The intussusceptum was about 1 ft. in length, and consisted of the two tubes of gut—the middle and internal tubes, so that about 24 in. of gut were involved. There was evidence of a tight constriction at the neck of the intussusceptum, but in the specimen the little finger could be introduced into the inner tube. This would explain the passage of natural formed motions previous to the passage of the intussusceptum itself. The whole bowel was gangrenous and very offensive; but the two tubes were not adherent, and the inner tube could be reduced a little way. Attached to the middle tube was a mesentery, which contained fat, and which was believed to be omentum. The mesentery attached to the inner tube was in shreds and gangrenous. The three longitudinal muscular layers were clearly made out, so that the part involved would be mostly the right half of the transverse colon, with possibly a part of the ascending colon.

I have felt justified in reporting this case because of:

1. The rarity of acute intussusception in the adult.
2. The absence of any definite exciting cause.
3. The very rare occurrence of spontaneous cure.

Muscular strain and indigestible food are the causes commonly ascribed in textbooks, but this man was accustomed to lift heavy weights up to 300 lb, and when he happened to lift 50 lb. with the *right* hand alone on the morning previous to the attack he felt no immediate bad effect.

His food was that to which he was accustomed. The strained position which he occupied during defaecation on board the sailing boat may have increased the extent of the intussusception, but the pain had then already commenced.

As regards the treatment adopted, my first thought was operation, which I offered to perform, but as the patient was unwilling I did not press the point, in the absence of hospital accommodation and other medical assistance. Remembering the dictum of an experienced physician of my acquaintance that "nearly all cases of acute appendicitis could be cured by morphine and hot water," I tried this treatment, adding daily enemata in an attempt to reduce the obstruction. As the patient passed a little flatus with the third enema, I felt justified in prescribing small doses of calomel to overcome the effect of the morphine on the upper part of the bowel. This, as the case showed, proved successful, as I believe, by causing a movement of the bowels, it prevented the stercoraemia which might have caused the death of the patient from exhaustion; and, although unforeseen, it probably hastened the separation of the gangrenous gut, thus preventing a certain amount of toxaemia.

In conclusion, I attribute the result of the case to be due in a large degree to the physique of the patient, who was one of those thin, spare individuals who seem best able to survive a serious illness.

AMONG the new Senators of the Kingdom of Italy are two representatives of the medical profession. These are Dr. Camillo Bozzolo, Professor of Clinical Medicine in the University of Turin; Dr. Tommaso de Amicis, Professor of Dermatology and Syphiligraphy in the University of Naples. The same distinction has been conferred upon Professor Cimician, who, though not a doctor, has taught chemistry to so many generations of medical students, first at Rome and afterwards at Bologna, that he may be claimed as of the household of medicine.

UNDER the will of the late Mr. Henry Minson, of Green Lanes, Newington, the following institutions each receive one-seventeenth share of the residue of his estate: The Royal Sea Bathing, Great Northern Central, London, Metropolitan, and London Fever Hospitals, Earlswood Asylum, and the Royal Asylum for Incurables, Putney. The residue is of such amount as to secure to each of the beneficiaries between £400 and £500.

A Demonstration

ON

DIVERTICULA OF THE ALIMENTARY TRACT OF CONGENITAL OR OF OBSCURE ORIGIN.

GIVEN AT THE ROYAL COLLEGE OF SURGEONS, ENGLAND,

BY

PROFESSOR **ARTHUR KEITH**, M.D., F.R.C.S.ENG.,

CONSERVATOR OF THE MUSEUM.

ABNORMAL diverticula of many different kinds are found in connexion with the alimentary tract. The annexed table will show you to what extent the various forms are represented in the college museum (Column A) and also in the museums attached to the various medical schools in London (Column B).

List of Specimens Illustrating Diverticula of the Alimentary Tract in the Medical Museums of London.

	A.	B.	Total.
I. Retro-cricoid diverticula of the pharynx	3	7	10
II. Traction diverticula of the oesophagus	2	10	12
III. Cysts apparently derived from the oesophagus...	1	5	6
IV. Diverticula of the stomach	1	1	2
V. Pressure diverticula of the duodenum	5	7	12
VI. Developmental diverticula of the duodenum and neighbouring parts of the alimentary tract	2	0	2
VII. Cysts connected with the intestine	2	1	3
VIII. Pressure diverticula connected with the small intestine	5	2	7
IX. Pressure diverticula connected with the great intestine	2	5	7
X. Meckel's diverticulum	11	84	95
	34	122	156

Retro-cricoid Diverticula of the Pharynx.

In Fig. 1 I have represented a typical retro-cricoid diverticulum of the pharynx, drawn from one of the three preparations in the museum of the Royal College of Surgeons. There are seven preparations in the museums of the metropolitan medical schools, so that I have had an opportunity of studying ten in all, six of which show the sac in its relationship to the pharynx. In all six, as in the specimen shown in Fig. 1, the pouch springs from the posterior wall of the pharynx, its orifice being situated opposite the cricoid cartilage. The sac is composed of the mucous and submucous coats of the pharynx, which have become gradually evaginated between two definite parts of the inferior constrictor muscle. On the smaller sacs, and round the necks of the larger, may be seen scattered muscle fibres derived from the inferior constrictor. The two parts of the inferior constrictor separated by the opening orifice of the diverticulum are shown in Figs. 1 and 2. The lowest part is mainly attached to the cricoid cartilage, and serves as a sphincter to the upper orifice of the oesophagus.* The upper or chief part of the inferior constrictor serves quite another purpose; its main function is to seize the bolus of food and force it into the oesophagus in the following manner. In deglutition the larynx is drawn upwards and forwards, the quadrate plate of the cricoid cartilage being thus drawn away from the posterior wall of the pharynx, so that the bolus of food which is to be forced into the oesophagus may sink into the space between the quadrate plate of the cricoid and the inferior constrictor. The moment the bolus of food has reached the retro-cricoid space it is seized by the inferior constrictor, compressed against the cricoid quadrate plate, and forced past the sphincter into the oesophagus. Apparently in the act of swallowing the upper sphincter of the oesophagus is relaxed, but of the nervous mechanism concerned we know nothing. A study of the mechanism of swallowing shows why diverticula arise at the junction of the two parts of the inferior constrictor between the upper part, which acts as a force-pump, and the lower part, which is sphincteric in nature. It is between these two parts that the mucous membrane of the pharynx becomes evaginated to form diverticula.

It is certain that these pouches are unconnected with embryological branchial clefts;† they have never been seen in fetuses, nor in children; the youngest subject I have found a record of was 45 years of age. Although these pouches cannot be regarded as embryonic remnants, yet it is very probable that the opinion expressed by our leading authority on these structures—now President of this college—that they are the result of a congenital predisposition, is true, but at the present time one cannot decide whether the predisposition is a defect in the arrangement of the inferior constrictor or to a functional disturbance in the action of its two parts. Preparations of the pharynx made by the prosector, William Pearson, show that the diverticula arise where a special deep layer of the inferior constrictor ends; these deep longitudinal fibres have been described by the late Professor Birmingham.[1] Mr. Bilton Pollard,[2] in a remarkable case published recently, found that the pouch became 2¾ in. deeper in five years. Mr. Bowlby informs me that they are more apt to occur in people with long necks. Another case is well described by Mr. William Taylor.[3] In 1905 Mr. Butlin[4] published an account of a series of 8 cases.

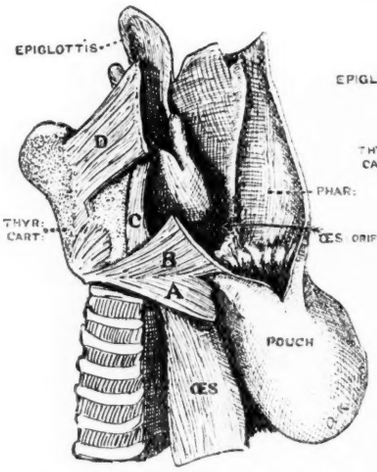

Fig. 1.—Specimen showing the relationship of the retro-cricoid diverticulum to the inferior constrictor. (No. 2291.)

Fig. 2.—Showing the sphincteric part of the inferior constrictor (A).

A, Sphincteric part of inferior constrictor: B, D, propelling part of inferior constrictor; C, E, vertical, deep fibres derived from the middle constrictor, stylo-pharyngeus and palato-pharyngeus.

Diverticula of the Oesophagus.

In the museum of the Royal College of Surgeons there are two typical specimens of "traction" diverticula of the oesophagus, one of which is represented in Fig. 3. These diverticula are commonly found on the anterior wall of the oesophagus, near the bifurcation of the trachea. They vary in size; the smaller may hold a pea, the larger will take the point of the little finger. Adherent to the fundus of the saccule are found (1) a lymphatic gland, usually showing marks of former inflammation, and (2) a fibro-muscular cord (Ribbert's cord), which ends on the posterior aspect of the trachea or of the bronchi. The diverticulum is composed chiefly of the mucous and submucous coats of the oesophagus, but the attenuated muscular coat may also be present. Riebold[5] has recently devoted a monograph to these pockets; they rarely give rise to clinical

* After these demonstrations were delivered Dr. Scanes Spicer was good enough to draw my attention to a very remarkable paper by Professor Gustav Killian of Freiburg in the *Annales des maladies de l'oreille et du larynx*, 1908, t. xxxiv, p. 8. In this article Professor Killian gives a full description of the upper sphincter of the oesophagus, of its anatomy, physiology, pathology, and relationship to pharyngeal diverticula, anticipating me in every point, and proving his thesis in a more complete manner than I have done.

† Professor Fawcett of Bristol has informed me that he has seen a diverticulum in the developing pharynx of a pig which corresponds in position to the diverticula found in the human pharynx.

symptoms. Their origin is due to (1) a localized adhesion of the oesophagus to the surrounding parts, usually due to inflammation of one of the bronchial glands; (2) to traction of this adhesion, which occurs during coughing, deep inspiration, and deglutition. In these acts the trachea and oesophagus move independently and elongate the adhesions formed between them, with the result that "traction" diverticula of the oesophagus are formed.

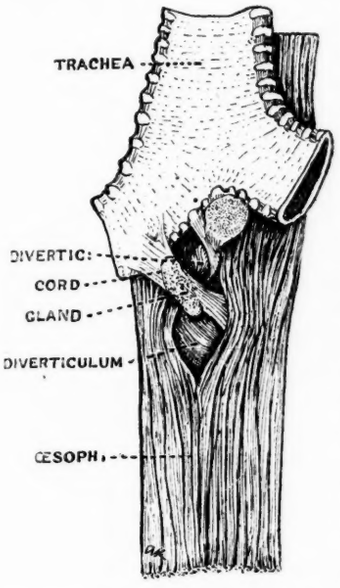

Fig. 3.—Traction diverticula of the oesophagus (Preparation No. 2291A).

Although such oesophageal pouches are common, there are only ten specimens in the metropolitan medical museums, six being in the museum attached to the school of Guy's Hospital. In nine specimens the pouches—in one case five in number—were situated at the bifurcation of the trachea; in one the pocket was situated on the posterior wall of the oesophagus.

Besides these traction diverticula there are others of a more obscure nature. One of these, in the college museum, No. 2291c, occurs in the lower third of the oesophagus of a horse. The muscular coats, especially the longitudinal, are greatly hypertrophied (Fig. 4). The diverticulum is wide-mouthed and shallow, and appears to have been formed by the evagination of the mucous membrane in a rent of the longitudinal coat. In another specimen in the museum of Guy's Hospital the pouch measures 30 by 40 mm.

Cysts Apparently Connected with the Oesophagus.

In this group I include a series of six preparations all of which are of an obscure nature.

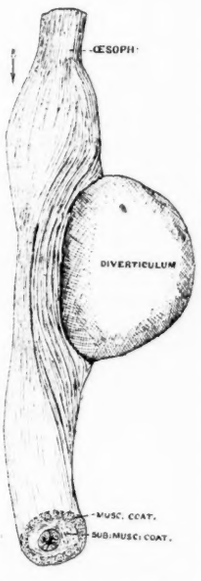

Fig. 4.—Diverticulum in the oesophagus of a horse (Preparation No. 2291c).

In Fig. 5 is shown a preparation in the college museum (No. A 2324) presented by Dr. R. G. Hebb[6] some years ago. A cyst about 20 mm. in diameter occurs in the wall of the upper part of the oesophagus. It gave rise to no symptoms and lies against the left and posterior wall of the trachea. The cyst wall, which contains striated and non-striated muscle, is lined by an epithelium similar to that of the trachea. It evidently arose during the separation of the trachea from the oesophagus. Were this cyst to communicate with the oesophagus a form of pouch or diverticulum would be produced, very similar to one recently described by Dr. Denyer.[7] Two preparations in the museum of Guy's Hospital show a small cyst in the wall of the oesophagus—probably derived from distended glands. Two other preparations in the museum attached to the schools of St. Thomas's and St. George's Hospitals show a cyst of a different nature—probably dermoid. These cysts, of large size—30 to 40 mm. in diameter—are situated immediately behind the oesophagus in the posterior mediastinum. A preparation in the museum of Charing Cross Hospital shows a large cyst at the junction of the oesophagus and stomach.

Diverticula Connected with the Stomach.

Diverticula connected with the stomach are very uncommon. In some mammals, such as those of the pig family, diverticula are developed normally in connexion with the cardiac end of the stomach; indeed, the cardiac end of the human stomach is developed as a diverticulum of the foregut. I have seen only two preparations of diverticula of the stomach. In both cases these diverticula were connected with the cardiac end, and were evidently pathological in nature. One of these is in the college museum, and was obtained from the body of a woman over 70 years of age. The diverticulum is wide mouthed and shallowed, with an attenuated covering of muscular fibres. It arises from the cardiac end of the stomach, just below and behind the entrance of the oesophagus. In the other preparation, in the museum of Guy's Hospital, the diverticulum is composed merely of mucous membrane, and arises from the stomach near the oesophageal orifice. Recently Dr. Falconer[8] has described a case in which a diverticulum was connected with the pyloric part of the stomach. Pancreatic tissue was developed at the fundus of the diverticulum.

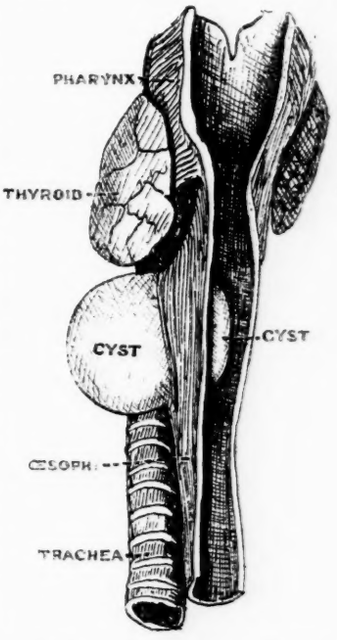

Fig. 5.—Cyst in the upper part of the oesophagus (Preparation No. A 2324).

Pressure Diverticula of the Duodenum.

In old people, especially in those who are the subjects of visceroptosis, it is not uncommon to find diverticula in the posterior wall of the duodenum near the termination of the common bile duct. These diverticula are pouches of mucous membrane, varying in size from 10 to 25 mm. in depth, extruded at certain weak points in the musculature of the duodenum—weaknesses due to the oblique manner in which the terminal part of the common bile duct perforates the muscular coat of the duodenum. These pouches appear to give rise to no functional disturbance. I had an opportunity of studying twelve preparations illustrating these traction diverticula, five of which are in the college collection. In three specimens there were two pouches, the orifices being situated to the right and left of the terminal part of the common bile duct (see Fig. 6). In seven specimens only the right pocket was present; in one only the left. In another case the orifice of the pocket was situated 20 mm. above the termination of the common bile duct. The exact manner in which these pouches are produced is obscure, but since they are composed purely of mucous membrane, and arise at definite weak points in

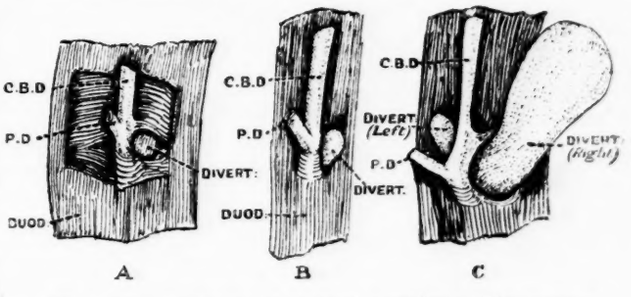

Fig. 6.—Three specimens of duodenal diverticula. The common bile duct is seen passing down the posterior aspect of the duodenum. A, represents an incipient stage of the pouch; B, a small pocket to the right of the common bile duct; C, a pocket on each side.

the musculature, one may safely infer that they are of the nature of pressure pouches. They are so frequent in the subjects of visceroptosis that one must suppose they are produced either by a compression of the terminal part of the duodenum which passes under the origin of the superior mesenteric artery, or that they are produced by traction at the terminal part of the common bile duct where prolapse of the duodenum takes place. Pilcher has attributed the earliest case on record to Morgagni; the paper by Rolleston and Fenton[9] in 1900 was the means of directing the attention of medical men in this country to their occurrence.

A specimen in the museum of St. George's Hospital shows the ampulla of Vater converted into a large cyst.

Developmental Diverticula of the Duodenum of Neighbouring Parts of the Gut.

The pockets just described are certainly produced by obscure forces acting in later life, but the forms now to be described are produced during embryonic life. In mammalian embryos during the second month of development, Drs. F. T. Lewis and F. W. Thyng[10] found numerous epithelial outgrowths along the whole length of the intestinal tract, but especially in the duodeno jejunal part. These outgrowths, which gradually disappear, were similar in nature to the buds which give rise to the pancreas. Diverticula of the intestine, with masses of pancreatic tissue at the fundus, have been described by Mr. H. S. Clogg[11] and Professor Alexis Thomson[12]; mention has already been made of Dr. Falconer's case, in which a pancreatic diverticulum was connected with the pyloric part of the stomach. Preparations illustrating this form of diverticulum are rare in metropolitan medical museums. In a preparation of congenital occlusion of the duodenum, presented to the college museum by Mr. Ernest Shaw, there is a shallow diverticulum from its first stage, but the glandular tissue at its fundus has rather the structure of Brunner's glands than of the pancreas. Another specimen in the college museum (No. A 2523) shows an accessory pancreas attached to the upper part of the jejunum, but there is no diverticulum. A pouch, arising from the third stage of the duodenum, recently described by Professor C. M. Jackson,[13] may have arisen from a congenital pancreatic diverticulum.

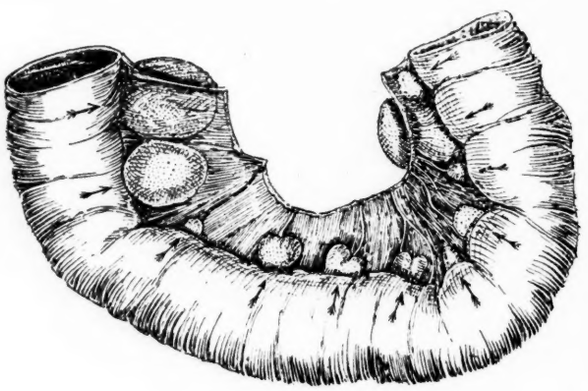

Fig. 7.—Segment of the jejunum showing numerous pressure diverticula in various stages of development. The arrows indicate the diverticula.

Cysts Connected with the Intestine.

Of the various museum preparations I had an opportunity of examining, only three showed a cyst connected with the intestine. The most typical specimen is No. 2523 G of the college collection, presented by Mr. Frederic Eve. A serous oval cyst, some 25 mm. in its greatest diameter, lies between the layers of the mesentery where these are reflected on the jejunum. It is not improbable that a cyst such as this is formed from one of the many intestinal diverticula which Lewis and Thyng have observed during development, for they noted that their communication with the intestine may become closed and a cyst thus formed. A cyst in a similar position, but much larger in size (45 by 25 mm.) is shown in a specimen in the museum of St. Bartholomew's Hospital (No. 1952 A), but in this case the cyst possesses two communications with the jejunum. No. 264A in the college museum illustrates a dermoid cyst connected with the small intestine of an ox.

Pressure Diverticula of the Small Intestine.

The preparation I have selected to illustrate this condition is one recently presented to the college museum by the authorities of the medical school of Middlesex Hospital through Dr. Ernest Lakin. It is a segment of the jejunum (Fig. 7) measuring 16 in. in length with its mesentery still attached. Along the line of the mesenteric attachment is a series of pockets or diverticula of the mucous membrane, lying between the layers of the mesentery and varying in size from a pea to that of a hen's egg. On each of the smaller cysts a vessel ends, countenancing the theory that these diverticula perforate the muscular coat at the points where the vessels enter and leave the submucous coat. Such specimens demonstrate the strength and value of the peritoneal coat of the bowel; such diverticula are always formed along the mesenteric line, where the muscular coats are unsupported by a serous covering. The exact manner in which they are formed is obscure; one cannot conceive either the segmental or the true peristaltic movement of the intestine as sufficient to produce them; to give rise to such diverticula there must be a high intra-intestinal pressure such as occurs during irregular tonic contraction of considerable segments of the intestine. There are four other specimens besides the one shown in Fig. 7 in the college collection; one of these was obtained from Mr. Langstaff's museum; another, from a boy who died of septicaemia, was presented by Mr. Marcus Beck; a third, in which the diverticula are filled with cholesterin-lime bodies, came from Sir Erasmus Wilson; the fourth specimen was found in an ox. There is also a specimen in St. Bartholomew's Hospital Museum, and another—a single cyst in the upper part of the jejunum—in the museum of Middlesex Hospital. Thus, as far as I know, there are only seven museum specimens in London of this condition, and all of them affect the jejunum or commencement of the ileum. Dr. Angas Johnson[14] described a case in an old man of 90 in which there were numerous diverticula along both the large and small intestine. The same writer mentions the fact that Hansemann has demonstrated the artificial production of such diverticula by subjecting closed segments of intestine to high degrees of pressure. Dr. Scot Skirving[15] has described invaginated diverticula of the small intestine, but I have seen no illustration of this condition.

Multiple Diverticula of the Great Intestine.

Although multiple diverticula of the great intestine—especially of the iliac and pelvic segments of the colon—are not infrequently seen in the *post-mortem* room, there are comparatively few specimens in the metropolitan museums. In the college museum there are only two—one presented by Sir Erasmus Wilson in 1884, and another from a dissecting room subject added to the collection last year. In the museums attached to the medical schools I saw only five specimens. Last year Mr. W. H. Maxwell Telling[16] was able to give an account of 80 cases, 33 of which manifested no clinical symptoms. His article is the best contribution that has been made to the literature of this obscure condition.

In Fig. 8 I give a section across one of the specimens in the college museum. The diverticula are of various sizes, and do not contain concretions. In another case which I examined, and in the specimen presented by Sir Erasmus Wilson, there were concretions composed of cholesterin and calcium carbonate. When concretions are present the orifices of the diverticula are very small. Most of the diverticula, but not all, occur either at the attachment of the mesocolon or in the roots of the appendices epiploicae. They are true evaginations of the mucous membrane through the muscular coat, evidently caused by a high intracolic pressure. The taenia of the colon, in the segments where these diverticula occur, are so strongly contracted—a tonic contraction evidently—that the wall of the colon is thrown into circular folds, somewhat after

the manner of a concertina; but so deeply do these folds invade the lumen of the colon, and so closely do they come into apposition, that a forward passage for the contents of the intestine is nearly impossible. The circular coat is also irregularly contracted. The diverticula of mucous membrane are evidently extruded at weak points of the muscular coat of the colon, their evagination being caused by an irregular and continued contraction of the musculature of the colon, especially of the longitudinal bands. The vessels for the appendices epiploicae arise from the submucous plexus of the colon, and apparently the diverticula occur, as Klebs has pointed out, at the points at which the vessels perforate the muscular coat. Meckel's diverticulum and other structures connected with the yolk sac form the subject of a separate demonstration.

Meckel's Diverticulum.

It is a remarkable fact that man is almost the only mammal in which Meckel's diverticulum occurs with any degree of frequency. Dr. Chalmers Mitchell,[17] on examining over 200 mammals of various species, did not find a single instance, and found no record in literature with the exception of one by Pallas, who had seen it in a species of rodent. Amongst certain families of birds Dr. Chalmers Mitchell found that Meckel's diverticulum was always represented, especially amongst wading and swimming birds. Johannes F. Meckel,[18] however, in his textbook on pathological anatomy, published in 1812—where one may still find the best and fullest description of the structure which has received his name—mentions the fact that it occurs not infrequently in the pig. All the specimens—some 95 in number—in the medical museums of London are from man. There is a specimen in the college collection of the ileum of the ox with a shallow diverticulum which may be Meckelian in nature, but, with this exception, the human form is the only one represented in our museums. It is just possible that the frequent persistence of a part of the yolk sac in man—a part which

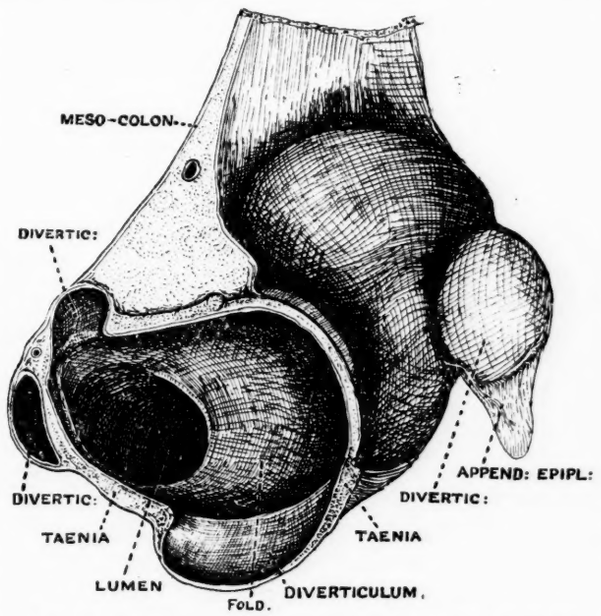

Fig. 8.—Part of the colon showing the relationship of the diverticula to the taenia, and the manner in which the lumen is occluded by semilunar folds.

may be described as its neck—is owing to the comparatively rich and abundant nourishment that is available for the mother amongst civilized races.

Not one of the eleven specimens of Meckel's diverticulum in the college museum belongs to the original Hunterian collection, although in the physiological series of the museum there is the most complete evidence that Hunter had studied the history of the yolk sac in all forms of vertebrates. Numerous preparations of his show the function and fate of the yolk sac in fishes—how it gradually shrivels up and disappears within the body as the young fish matures, and how in certain sharks it forms a real placenta. He illustrates the manner in which the yolk sac is drawn completely within the body of birds towards the end of the incubation period. He must have been familiar with the fact that in mammals the yolk sac is not retained as in other vertebrates, but cast off with the membranes. His brother William, in his great work on the gravid uterus, gives an excellent drawing of a third-month human embryo in which the sac is seen at the distal or placental end of the umbilical cord, for that structure is developed from the belly wall of the embryo round the neck of the yolk sac. As the umbilical cord elongates, the neck of the yolk sac is drawn out to the full length of the cord, and undergoes a complete atrophy in the process. If the intra-abdominal part of the neck of the yolk sac persists it forms a Meckel's diverticulum. There are specimens in the physiological series showing Hunter knew that remnants of the artery and vein of the yolk sac may persist within the abdominal cavity of young mammals—structures with which Meckel was also familiar.

A study of the museum preparations perhaps overemphasizes the dangers of possessing a Meckel's diverticulum. Of the 95 preparations, 37 had caused acute obstruction; 3 had produced intussusception, 3 had been the seat of inflammation (diverticulitis); the remainder—52 in number—were discovered in the routine work of the dissecting or *post-mortem* room. Dr. H. T. Gray[19] was able to collect, from medical records published between 1893 and 1907, 150 cases in which Meckel's diverticulum was the cause of intestinal obstruction.

I have notes relating to the length of the diverticulum in 51 preparations. In 11 it was under 25 mm.; in 21 it was over 25 but under 75 mm.; in 14 it varied between 75 mm. and 100 mm.; in 5 it was over 100 mm., the longest specimen (130 mm.) being one described recently by Mr. F. G. Parsons, and presented to the collection of this college by the authorities of the medical school of St. Thomas's Hospital. As regards form, 30 may be described as sausage-shaped, 12 as saccular, 9 as conical, 23 as vermiform, 13 as filiform, 3 as hemispherical, and 3 as vestigial—mere serous tags on the free border of the ileum at Meckel's site. In 12 preparations there were secondary sacculations of the diverticulum, situated at or near its fundus.

The diverticulum may be provided with a mesentery similar to that of the appendix, which usually passes, not behind the ileum as is the case with the mesentery of the appendix, but in front of it, although this is not invariably the case. In birds the diverticulum has both an anterior

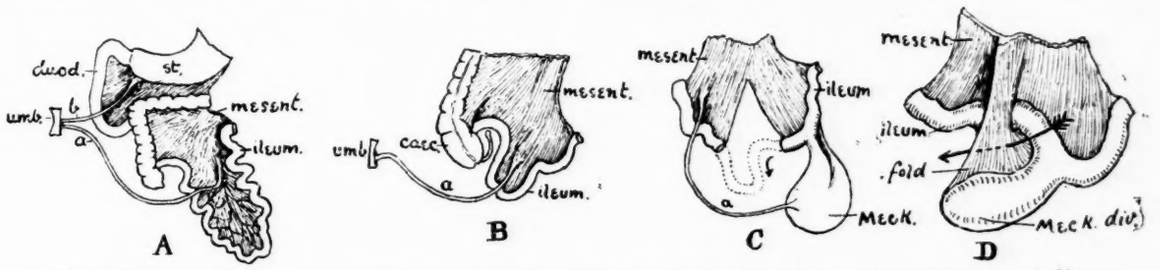

Fig. 9.—Illustrating various remnants of the mesentery of Meckel's diverticulum and of the vessels of the yolk sac. A. Showing the termination of the arterial cord (*a*) and the venous cord (*b*) in the mesentery of a kitten. The cords are attached to the umbilicus (*umb.*) B. The persistence of the arterial cord in a human subject. C. Showing the free border of the mesentery of Meckel's diverticulum separated to form a cord (*a*). D. Specimen showing a Meckel's diverticulum with a well-developed mesentery. The arrow perforates the part of the mesentery which may atrophy, thus leaving the free border as a cord.

and a posterior mesentery. In 16 specimens of the 95, the mesentery was well developed; in 3 it was vestigial. In 6 of the specimens with a well developed mesentery a single artery passed to the diverticulum near the free border of the mesentery. In 10 preparations there was no mesentery, only a cord of varying length passing from the mesentery of the ileum, to end in the fundus of the diverticulum (Fig. 9, C). There can be no doubt now as to what that cord is; it is a persistent free border of the original mesentery of the diverticulum—usually containing a remnant of the vessels to the diverticulum, the rest of the mesentery having undergone the normal process of atrophy (Fig. 9, D). This interpretation was forced on me some years ago by the study of intermediate forms, but I found from Dr. Ernst Schwalbe's excellent textbook[20] that Neumann had given the correct explanation years before me. A diverticulum provided with such a cord forms a snare in which a loop of bowel is apt to become strangulated; indeed, most cases of strangulation occur with this form. In three cases the apex of the diverticulum was adherent to the mesentery of the ileum—an adhesion which may be the result of inflammation or of merely a contraction of the mesenteric cord. In three cases the diverticulum was turned up and almost adherent to the front of the mesentery of the ileum owing to a peculiar shortening or contraction of the mesentery of the diverticulum.

The ileum often shows a marked constriction or narrowing in the neighbourhood of a Meckel's diverticulum. In 12 of the preparations the constriction was just above the diverticulum, in 8 below it, and in 7 almost opposite to it. These constrictions are of two kinds: (1) those due to the pressure or traction exercised by the mesentery of the diverticulum as it crosses the ileum; (2) those due to an irregular growth or expansion of the Meckelian loop of the ileum—the last part of the intestine to be differentiated from the yolk sac.

In twelve preparations, all of them derived from subjects under 12 years of age, Meckel's diverticulum ended at or near the umbilicus. In nine of the twelve there had been an umbilical fistula at birth, which had become closed spontaneously or by operative measures; in the remaining three specimens the diverticulum terminated imperviously as a cord which was attached to the umbilicus or to the abdominal wall some distance below. The most remarkable specimen of this group is No. 548 B in the college collection (Mr. Bilton Pollard's case), where the diverticulum is 90 cm. long, and arises from the jejunum 60 cm. below the pylorus. In this case there was also an umbilical hernia.

Many cases have been reported recently where masses of glandular tissue, similar to the pancreas in structure, and in function, have been found embedded in the wall of a Meckel's diverticulum, even in those which open at the umbilicus. I met with no example of an accessory pancreas attached to a Meckel's diverticulum, but it is possible that a microscopic examination may reveal pancreatic tissue in some of the museum preparations. Those which I have examined showed the same microscopic structure as the ileum, and it is not impossible that the diverticulum in many cases represents not a part of the yolk sac, but a part of the ileum which has been imperfectly separated from the yolk sac. As already mentioned, Drs. Lewis and Thyng found that an accessory pancreatic outgrowth may be formed in any part of the bowel. In explanation of the occurrence of an accessory pancreas in Meckel's diverticulum, one must remember that at an early stage of development—the end of the third week—the mouth of the yolk sac extends up to the second stage of the duodenum, where the pancreas has its origin.

Omphalo-mesaraic Cords formed by the Vessels of the Yolk Sac.

The intra-abdominal part of the vitelline duct (neck of the yolk sac) may undergo a normal atrophy, and yet the artery of the sac may persist, forming a stout cord between the umbilicus and mesentery of the ileum, over which the bowel may become strangulated. There is such a specimen in the college collection and three others in museums attached to medical schools in London (see Fig. 9, B). The cord is also present in two specimens of umbilical hernia in the college collection. In newly-born puppies and kittens these cord-like remnants of the yolk sac vessels are found constantly, a fact which Hunter was familiar with, and their nature was fully understood by Meckel. In kittens and puppies the cord representing the vein ends at the lower border of the pancreas; that representing the artery ends in the mesentery of the ileum. I have seen no remnant of the vein in human subjects, but in two malformed human fetuses with umbilical hernia I found the superior mesenteric vein, which is derivative of the vein of the yolk sac, terminating in the placenta in place of in the portal vein. Dr. H. E. Jordan[21] found that there may be two veins to the yolk sac in the human embryo. Kittens sometimes show two cords of venous origin. A preparation presented recently to the college collection by Mr. J. D. Malcolm, shows a cord-like remnant of the artery of the yolk sac in the adult, but the cord had lost its connexion with the umbilicus.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF FOREIGN BODY IN THE OESOPHAGUS REMOVED BY THE DIRECT METHOD.

AN elderly gentleman whilst taking his lunch felt a piece of bone pass into the oesophagus and become fixed there; he was unable to take any more food, and as he was suffering great pain he went to the hospital. No foreign body could be seen by the ordinary laryngeal examination; the probang was therefore passed several times, but no foreign body was extracted, nor did the instrument catch on anything. On examination in the *x*-ray room with the screen no foreign body was seen. He, however, persisted that he could feel it there, and he was sent on to me. On examination both arytenoid regions were seen to be swollen, and there was a small wound on the left. As the patient said that this was where the pain on swallowing could be felt, and as no foreign body had been revealed by the *x* rays, I thought that this would probably account for the pain, and I therefore advised him to wait a few hours before having any further examination.

The pain continued to increase; I therefore had him anaesthetized, and by means of a Brüning's tube I was able at once to see and extract a large piece of bone from a point about 2 in. down the oesophagus. The bone was firmly fixed right across the oesophagus, and had to be broken in half to be removed; it was about 1¼ in. long and was a piece of the temporal bone with a large zygomatic process, which was embedded firmly in the anterior wall of the oesophagus. After the removal the patient made a rapid recovery.

The case is reported, first because of the fact that the *x* rays showed no foreign body, and secondly on account of the ease with which foreign bodies in the oesophagus and the air passages can be seen and removed by this method.

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London, W

Reports of Societies.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Wednesday, February 2nd, 1910.

Dr. BYROM BRAMWELL, President, in the Chair.

Gout and the Thyroid Gland.

DR. CHALMERS WATSON drew attention to some of his earlier investigations which had shown an important influence upon the structure of glands and tissues, and notably the thyroid gland, of an exclusive meat diet. These results were made the basis of the theory of gout as due to a special type of thyroid activity induced by the long-continued use of an excessively nitrogenous diet. Such a diet, in his view, altered the "soil" or diathesis, and thereby created a predisposition to autointoxication; and these two factors constituted gout. His experiments had been criticized. But on repeating them with a diet which removed the objections advanced, and consisting of cooked lentils, cooked ox flesh, and bread and milk—that is, a rich nitrogenous diet—he obtained the same evidence of altered thyroid structure, a primary stimulation followed by exhaustion, and this alteration of structure was transmitted to the offspring. The anomalous cases where gouty symptoms were relieved by restriction of farinaceous food he explained by the hypothesis of derangement of the function of the pancreas; and by the presence of Cammidge's reaction in the urine of these cases he had secured evidence for this hypothesis. This view of gout was supported by clinical facts. There was an antagonism between the physical types of tuberculosis and gout. Yet by a richly nitrogenous diet the type of the former could be transformed into that of the latter. Again, the transmission of the gouty type from one generation to another was well known. Dr. W. RUSSELL said that it was improbable that diet should affect one gland and not other structures in the body. On the contrary, it was known that free proteid feeding stimulated powerfully the liver and kidneys, and affected also the internal secretion of the adrenals. It was difficult to accept the proposition that modification of the thyroid had anything to do with gout. DR. CHALMERS WATSON, in reply, said he was aware of the effect of special diet upon other glands and organs, but the striking change produced by a rich proteid diet was in the thyroid gland.

Prostatism.

Mr. DAVID WALLACE said that prostatism was usually, but not always, associated with enlargement of the prostate. There were also the cases where, in the absence of prostatic enlargement, there was a fibrous stenosis of the neck of the bladder, and there were also the cases of malignant disease. In the cases of simple prostatic enlargement he was opposed to operation unless the symptoms were disabling or getting worse. The existence of, say, 4 oz. of residual urine was no indication for operation, and the practice of catheterization for this purpose was needless and dangerous. For ordinary prostatectomy the suprapubic operation was the better. In the cases where per rectum there was no palpable enlargement of the prostate cystoscopy was useful, and if there was constriction of the vesico-urethral orifice this should be divided, and preferably by the perineal route. Malignant prostatic enlargement was indicated by pain and by diurnal incontinence, and on rectal examination by the hardness, fixation, and nodularity of the tumour. In such cases the radical operation was rarely successful, and the best treatment was first catheterization, and later suprapubic cystostomy. Professor CAIRD agreed that operation in the simple enlargement was not advisable unless the symptoms were serious, but did not share the dread of catheterization both for diagnosis and for treatment of the early cases. The PRESIDENT asked the average duration of life after the operation. Mr. WADE, in view of the association of renal damage even with early prostatic enlargement, suggested the advisability of early operation. Mr. MILES had known 3 cases of death from pulmonary embolism to follow the operation. Mr. WALLACE, in reply, said that the worst cases were those with thin dilated bladders. In his experience septic cases had done fairly well; and in his cases he had had no deaths from uraemia or pulmonary embolism. In his last series of 50 consecutive cases, the percentage fatality had been over 8 per cent., a figure claimed by several surgeons; in that series the average age had been 76.

The Blood Pressure in Anaesthesia.

Mr. WILLIAM GUY, Dr. A. GOODALL, and Dr. H. S. REID presented observations on the blood-pressure variations under various anaesthetics, and combinations of anaesthetics, Martin's modification of the Riva-Rocci instrument being used. Chloroform caused a uniform fall of pressure. Nitrous oxide increased the pressure markedly, largely because of the element of asphyxia; but this increase was much less with previous inhalation of oxygen. Ethyl chloride lowered blood pressure, and the more with increasing doses. Previous inhalation of nitrous oxide removed this depressing effect, while the use of oxygen, nitrous oxide, and ethyl chloride, maintained a steady blood pressure without any asphyxial element. Dr. MCALLUM, discussing the danger of chloroform in the struggling of early anaesthesia, said this was due to action of the concentrated vapour upon the cardiac ganglia. Dr. Ross pointed out that in Johannesburg the combination of oxygen with chloroform had reduced the fatalities. Dr. GOODALL briefly replied.

THE ROYAL SOCIETY.

Thursday, February 3rd, 1910.

Sir ARCHIBALD GEIKIE, K.C.B., President, in the Chair.

Transmission of Trypanosoma Lewisi by the Rat Flea.

PROFESSOR E. A. MINCHIN and Mr. J. D. THOMSON contributed a paper on the transmission of *Trypanosoma lewisi* by the rat flea (*Ceratophyllus fasciatus*). Their experiments were concerned essentially with the method of transmission and with questions connected therewith. Incidentally the fact of transmission was confirmed. All experiments were arranged so as to eliminate the possibility of infection other than by fleas, and to separate "direct" from "cyclical" infection. When preliminary experiments showed that infection, not "direct," had taken place, further experiments were arranged to determine if fleas once infective retained infection so as to be capable of infecting a series of healthy clean rats without themselves being again exposed to infection, and at the same time to determine by direct observation and within narrow limits (1) the length of the incubation period in the flea, and (2) the length of the multiplication period in the rat. In all the experiments tame rats and fleas bred in captivity were used. The following conclusions were drawn:

1. The rat-flea (*Ceratophyllus fasciatus*) transmits *T. lewisi* from infected to non-infected rats.
2. Transmission takes place by the "cyclical" method.
3. Transmission by the "direct" method did not take place.
4. The incubation period in the flea has a minimum length of about six days, but may be longer.
5. The length of the multiplication period in the rat is about twelve days.
6. In the developmental cycle the establishment of the trypanosome in the flea begins with multiplication of *Crithidia*-like forms in the rectum. No flagellates had been found in any fleas which had not fed on infected rats.

Effect of Malignant Growths on the Size of Organs.

Dr. F. MEDIGRECEANU (Bucharest) contributed a paper on the relative sizes of the organs in rats and mice bearing malignant new growths. The weights of the different organs of normal animals bore a relatively constant ratio to the total weight of the body, and weighing experiments on 200 mice and rats bearing transplanted tumours, and on four mice with spontaneous tumours, had shown: (1) No disturbance of the normal ratio for the alimentary canal; (2) hypertrophy of the liver in all cases and up to a certain point proportional to the weight of tumour; (3) hypertrophy of the heart also in proportion to size of tumour; (4) no disturbance of normal ratio for the kidneys except in the case of a spindle-celled sarcoma which induced hypertrophy; (5) varying ratios for the lungs. The most important result had been the discovery of an enlargement of the liver in animals bearing carcinomata and sarcomata, whether transplanted or naturally arising.

Homogeneity of Resistance to Transplantation of Malignant Growths.

Dr. E. F. BASHFORD and Dr. B. R. G. RUSSELL (Imperial Cancer Research Fund) contributed a paper containing further evidence that the resistance which animals already bearing transplanted tumours might offer to a second transplantation was identical in nature with the resistance offered by animals without tumours, after immunization with normal or tumour tissue of the same species. A study of the processes at the site of the second implantation showed that, concomitantly with the establishment of the tumour developing from the first inoculation, an active resistance might be induced by the absorption of tumour tissue. Then the cancer cells implanted at the second inoculation failed to elicit the supporting connective tissue and vascular scaffolding necessary to their development into a tumour, and the process of resistance was exactly analogous to that previously described, when tumour tissue was implanted into mice after a preliminary immunization with tumour or normal tissue of the same species. The assumption of a distinct form of resistance, "atreptic immunity," was thereby rendered superfluous when tumour-bearing animals were resistant to a second inoculation. Prevailing conceptions of what constitutes immunity to cancer *sensu strictiori* were simplified further by experiments demonstrating that the active immunity to cancer, which followed in rats after a preliminary inoculation of mouse cancer, was not an immunity against cancer, but against the protein of a foreign species. Therefore, hypotheses of cancer immunity based upon a study of the behaviour of tumours in strange species had at most only an indirect bearing upon the immunity to cancer of the same species. By actual observation of the processes occurring in animals immunized against the inoculation of cancer of their own species, only one form of induced resistance had been demonstrated to exist, consisting, so far as elucidated, in an inhibition of the chemiotactic powers the cancer cells normally exercised upon the connective tissue and vascular scaffolding of the host. This single explanation harmonized all the observed facts, and freed the experimental study of cancer both of confusing hypotheses and of errors.

Effects of Inoculation of Living and Disintegrated Cancer Cells.

Dr. M. HAALAND (Imperial Cancer Research Fund) read a paper on the contrast in the reactions to the implantation of cancer after the inoculation of living and mechanically disintegrated cells. It had been shown that inoculation of living tumour or normal tissue of the same species induced resistance to subsequent transplantation of cancer. The present paper recorded experiments in which cancerous or normal tissues, after mechanical disintegration at −180° or 0° C., had been inoculated into mice. The experiments showed that a complete disintegration of the cells entirely robbed them of their immunizing properties against a subsequent transplantation of cancer. There was no difference between tumour cells and normal cells in this respect. The absence of immunizing power did not seem to be a question of dose of introduced material, because relatively enormous doses of dead material did not induce any resistance. In the same way the press-fluid, obtained from tumours and normal tissues by Buchner's press, was devoid of immunizing properties. The immunizing property was not bound up with the protein of the cell, but depended on a different principle. Living cells were necessary to induce resistance to transplantation of cancer. It seemed necessary that these cells should not only remain alive, but also even grow for a certain time; without the fulfilment of these conditions the reaction inducing active resistance was not set up. The same consequences followed autolysis, the action of heat, radium, etc., upon tumour tissue and normal tissue. The reaction which the introduction of disintegrated cells called forth was not only quantitatively different from that induced by living tissues, but also qualitatively different. Far from inducing any increased resistance, inoculation of disintegrated cells only seemed to manure the soil for a subsequent growth of tumours. The failure to elicit the reactions of immunity to the transplantation of cancer by devitalized tissues revealed an important difference from the immunity reactions obtained against bacteria and their products and foreign proteids in general, in which cases the immunizing properties were independent of the vitality of the organisms or cells.

ROYAL SOCIETY OF MEDICINE.

SECTION OF BALNEOLOGY AND CLIMATOLOGY.

Thursday, January 27th, 1910.

Dr. LEONARD WILLIAMS, President, in the Chair.

DR. R. ACKERLEY (Llandrindod Wells), in a paper on *Saline waters, and the use and abuse of common salt*, said the necessity of taking salt was disproved by the fact that in ancient and modern times large bodies of men did not take it. He instanced the Numidians and Egyptian priests in ancient times, more recently the North American Indians before they acquired European habits, the inhabitants of North Russia and Siberia, the Bedouins of Arabia, the Damarces, and others. Breast-fed infants obtained very little salt. The bulk of the common salt ingested by adults was added by the cook in the preparation of food for the table. Nearly all the common salt passed away from the body by the kidney. It was now admitted from the researches of Widal, Javal, and others, that when the kidneys were not healthy there was frequently considerable NaCl retention. Common salt taken in excess might prove harmful from the following causes: (1) By throwing excessive work on the kidneys; (2) by increasing for many hours in the day the proportion of sodium salts in the fluids and tissues of the body; (3) by causing the retention of fluid in the body; (4) by causing certain forms of diarrhœa, chronic bronchial and pharyngeal catarrh, and chronic skin diseases, in many cases where the kidneys were not able to excrete the salts ingested. Dr. Ackerley then considered the action of saline waters containing a small percentage of NaCl, and contended that clinical evidence showed that hypotonic saline waters were not injurious in gouty conditions. Such waters acted quite differently from salts added to and absorbed with food. He had no experience of hypertonic waters, but in the case of mixed mineral waters of low salinity like those at Llandrindod Wells he had failed to find any evidence that the gouty received anything but benefit from them, if the care necessary at any spa to see that the waters were being taken properly was exercised. Dr. SOLLY remarked that his own experience and that of his colleagues in Harrogate supported Dr. Ackerley's contention that an excess of salt absorbed was harmful, especially to the gouty, or to those whose eliminatory organs were at all defective. In administering the "strong sulphur water," which was very strongly charged with sodium chloride, it was always considered necessary to ensure free purgation—even to the extent of frequently administering a "liver pill" overnight, and Harrogate practitioners all were prepared to find trouble arising if the taking of the waters was not rapidly followed by free evacuation; the dehydrating action upon the blood and tissues being counteracted by the taking of a glass of one of the milder waters (whose salinity is about equal to "normal saline solution") during the forenoon, afternoon or both. The PRESIDENT, Dr. MOUILLOT, and Dr. HASLIP also took part in the discussion.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

Friday, January 14th, 1910.

Professor MUIR, President, in the Chair.

PROFESSOR NOEL PATON, in a paper on *Certain changes in the composition of the urine*, pointed out that the significance of the appearance of abnormal constituents in the urine—for example, sugar and albumen—was fully recognized by the physician, but that the meaning of quantitative changes in the normal constituents had not yet been properly appreciated. He then proceeded to consider these changes, especially alterations in the distribution of the nitrogen in the urine. The urinary nitrogen, derived as it was from the protein of the food and body, was, he said, normally distributed as follows: About 90 per cent. in urea, 4 per cent. in ammonia compounds, 4 per cent. in creatin and creatinin, 2 per cent. in the

purin bodies (uric acid, etc.). As to the mode of formation of these nitrogenous bodies from the protein, experiment showed that protein subjected to the action of a mineral acid could be broken down into various substances which differed according to the method of breaking down employed. In the analogous breaking down of protein in the body the first step was denitrization; ammonia was split off and went to form ammonia salts. These were dehydrated in the liver, and the resulting product was urea. Most of the nitrogen of the protein went to form mon-amino acids, but di-amino acids were also formed. The arginin compounds were denitrified, forming ammonium carbonate, which was dehydrated to form urea. Creatin in muscle, on the other hand, was dehydrated to form creatinin, which appeared as such in the urine. The purin bodies were derived: (1) In muscle, as xanthin; (2) from nucleins, as amino compounds, such as adenin. Eventually they were converted into uric acid

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AT a further meeting on January 28th Dr. ARCHIBALD HARRINGTON described and illustrated a case of *Gastric carcinoma*, with metastasis in the bone marrow. The blood picture suggested pernicious anaemia, and remained much the same during the five weeks the patient was under observation, many examinations being made. Nevertheless a diagnosis of metastasis was made on the ground of the presence of bone pains, leucocytosis, and the constant presence of large numbers of erythroblasts. The author, from his own case and others published, considered that when there was any reason to suspect the presence of cancer of the stomach or other organ, the presence of bone pains and large numbers of erythroblasts and myelocytes in the blood should suggest metastasis in the bone marrow, and that even the blood picture alone should suggest the diagnosis. Such a blood picture probably did not occur in cancerous anaemia apart from metastasis. The following are the results of one of the blood examinations made on January 9th, 1909: Erythrocytes, 1,900,000; leucocytes, 8,000; haemoglobin (Haldane), 42 per cent.; colour index, 1.1; differential count of leucocytes (Leishman stain), 500; polynucleated neutrophiles, 52·2; eosinophiles, 0·6; basophiles, 0.2; lymphocytes, 13.8; large mononucleated and transitionals, 28·2; myelocytes, 5; megaloblasts, 46 normoblasts, 20.

HARVEIAN SOCIETY.

Thursday, January 27th, 1910.

Dr. HANDFIELD-JONES, President, in the Chair.

THE following were the exhibits:—Dr. GEO. OGILVIE: (1) Three little girls in one family suffering from a form of *Hereditary ataxia*, differing in several features from Friedreich's disease; (2) three cases of *Tabes* treated over varying periods by special exercises, showing the gradual improvement in gait obtained thereby. Dr. LEONARD GUTHRIE: A case of acute *Bulbar polioencephalitis* in a child of 13, improving under treatment. Dr. CAMPBELL THOMSON: (1) A case of *Paralysis of the serratus magnus* muscle from injury, and demonstrated the consequent loss of power in fixation of the scapula, as shown by its winged appearance when the arm was raised, and also the inability to lift the arm freely above the head, owing to the rotation of the scapula being incompletely performed; (2) a case of *Cerebral tumour* of the motor area, in which the chief localizing symptom had been the occurrence of Jacksonian epilepsy in the right foot. Removal of the tumour had been followed by great temporary benefit, so that the patient had been able to return to his work for some months, but unfortunately the growth proved to be malignant, and signs of extensive recurrence were now present. Dr. GRIFFITHS (1) (for Dr. Harris): A case of *Infantile hemiplegia* with extreme contraction of wrist flexors treated by division of the tendons; (2) (for Dr. Johnson) a woman suffering from tabes with *Charcot's disease of the knee.*

THE late Mr. James Smith, a cotton broker of Liverpool, bequeathed £1,000 each to the David Lewis Northern Hospital, Liverpool, the Victoria Central Hospital, Liscard, and Wallasey Cottage Hospital, in addition to £500 each to the New Brighton Convalescent Home and the Cottage Hospital at Moffat, Dumfries.

Rebiews.

DISEASES OF THE STOMACH.

IN his monograph on *Diseases of the Stomach*,[1] Dr. HABERSHON has produced a well-written and admirably illustrated textbook in which the student will find not only an adequate account of the subject indicated by the title but also a complete and copiously illustrated description of the anatomy of the stomach, supervised by Professor Peter Thompson, as well as a clearly written compilation of the physiology of digestion based on Professor Starling's lectures. The author adopts Dr. Pavy's view that the leucocytes act as carriers of carbohydrates from the intestine; he is against a low protein standard, and opposes vegetarianism, mainly on the ground that vegetables are indigestible, and that their use leads to flatulence and anaemia, a position which he might have some difficulty in maintaining against the votaries of this system, who are at least able to point to a high degree of health and efficiency. We agree that racial experience is of the highest importance, but is it, perhaps, not going too far to suggest that the inhabitants of the Arctic Circle eat fat in preference to carbohydrates because experience has taught them that it is better for them? Is not the fact that carbohydrates have been so difficult to obtain the true explanation? In recent times flour has become an important article of trade with them, and the present race of Eskimos wherever they are in contact with civilization have made bread as much a staple food as the inhabitants of temperate climates. There seems to be some confusion between small and large calories, as on page 55 1 gram of protein is said to be equal to 4,500 calories, but on page 57 100 grams of protein are given as equivalent to 450 calories! Large calories are now invariably used, and should be employed throughout. The general rules for the examination of a stomach patient are excellent, but there seems to be need for some qualification of the statement that retraction of the umbilicus is a sign of the "round ligament being infiltrated with new growth," as this condition may always be seen in thick-walled fat abdomens. There is no reference to the width of the costal angle or the *habitus enteroptoticus* upon which so much stress is laid in Berlin. There seems to be some amount of uncertainty with regard to the value of certain signs, as, for example, the meaning of stomach peristalsis, which is said to be observed when there is obstruction of the pylorus and "less often in dilatation." The last statement is not quite clear; the sign is due to the pyloric obstruction and not to the dilatation, and is never present when dilatation occurs without an obstacle to the outflow of the stomach contents from some cause. Again, the succussion splash is called "an important sign," but excellent reasons are given why no great reliance can be placed on it, so that it would seem better not to have introduced it with terms of praise. Auscultatory percussion cannot be recommended as a means of defining the limits of a dilated stomach, nor is there any real analogy between the air-containing cavity in the liver which the author says he mapped out accurately by this means and a stomach surrounded by other air-containing viscera. The method of gastro-diaphany has not secured the confidence of clinicians, and in a very excellent paper Dr. E. Meinert of Dresden some years ago exposed its fallacy. The danger of distension by CO_2 is exaggerated, and nothing is said about defining the lower limit of the stomach by swallowing water, while readers are merely referred to Boas's textbook for the use of x rays in the investigation of stomach diseases. Considering the progress that has been made in this particular method of investigation at Dr. Habershon's old school, Guy's Hospital, this omission is strange. In the description of the use of test meals twelve hours is mentioned as the period warranting the diagnosis of stasis, but if useful deductions are to be drawn a period of six or seven hours is quite long enough. In the description of the examination of the stomach contents the student may be bewildered by the number of tests given, and his interest would be better served if Dr.

[1] *Diseases of the Stomach. A Manual for Practitioners and Students.* By S. H. Habershon, M.A., M.D., F.R.C.P. London: Cassell and Co., Ltd. 1909. (Cr. 8vo, pp. 577, 8 coloured and 4 black and white plates. 9s.)

Habershon had indicated those upon which most reliance can be placed. The subject of the urine in gastric disease is dealt with somewhat more briefly than its importance deserves. The author distinguishes between albumosuria and peptonuria by putting them under different headings, but does not indicate how he would distinguish them in practice; and as a fact we believe that these two conditions have generally been confounded. A great deal is grouped together under the heading of "dyspepsia" which would be clearer if it had been kept under separate headings. It is not possible to define what is meant by this term except that it is discomfort after taking food, and this is far too wide a definition to be usefully made the basis of systematic discussion, although it may well be used to illustrate various clinical types. In the dietetic treatment of dyspepsia we think many would take exception to the statement that stimulants are indicated in all cases of gastric insufficiency and atony due to nervous exhaustion, debilitated states, and anaemia, for many physicians are strongly impressed with the ill-effects of alcohol in all cases where gastric irritability exists. In the treatment of gastric ulcer we are surprised to see that Dr. Habershon advocates fourteen days' rectal feeding. He says: "In favourable cases, at the end of the second week after severe haemorrhage a small amount of food may be given by the mouth. A teaspoonful of Valentine's or other meat juice diluted with 1 oz. of water may be given every three hours . . . otherwise nothing but a few teaspoonfuls of water or some pieces of ice should be given to moisten the mouth." This treatment by starvation we had thought generally abandoned. We are surprised to find that in the treatment of dilatation of the stomach no mention is made of gastro-enterostomy. It would, perhaps, have been as well if the author had devoted a special chapter to stomach surgery in order that there might be no doubt as to his teaching upon this important question. A book for students should not be written exclusively from a medical point of view. It is most undesirable that students should imagine that physicians and surgeons differ on this question and that there can be a medical and a surgical method. It is possible to indicate the stage at which the help of the surgeon should be asked, and to lay down clearly for the guidance of students and practitioners what the indications are.

KEEN'S SURGERY.

THE fifth and concluding volume of KEEN'S *Surgery* well maintains the high standard of excellence set by those already published.[2] The first article, a monograph of 350 pages on the surgery of the vascular system, from the pen of Rudolph Matas, is enough in itself to make the book indispensable to general surgeons. Not only are such subjects as haemorrhage, phlebitis, and varicose veins, treated in the light of modern knowledge, with no more than decent respect for traditional nomenclature and conceptions, but the whole new field of reparative surgery of the heart and vessels is traversed in comprehensive fashion, possible only to one equally familiar with the practice and the literature of the subject. With the most unostentatious of guidance the reader is led to a safe discrimination amongst the many tentative methods for pericardiotomy, for exposure of the heart, for suture of arteries and veins, for anastomoses and transplantations, for aneurysmorrhaphy. The mention of parasitic aneurysms, which are found only in the horse, hints at the width of view of pathogeny which is beginning to prevail. The author points out that for surgical purposes it is no longer enough to classify aneurysms according to external form, the proper criterion being the number of orifices which connect them with the parent artery. It is instructive to learn that whilst aneurysm was rare amongst negro slaves, since emancipation has given them access to alcohol and exposed them to venereal infection, the coloured races have become four times as prone to the disease as the white. Where the whole is fresh and interesting it is idle to select parts for mention; from experimental aneurysms to post-operative visceral haemorrhages, every paragraph should be read.

The next two hundred odd pages offer a compact little treatise on gynaecology. Dr. Bland writes on methods of examination, advocating, of course, the dorsal position for vaginal diagnosis and entering a caution against neglecting inspection on grounds of delicacy. It is significant that he should find it necessary to write: "The marital history should also include a record of the methods employed to prevent conception." Surgery of the vulva and vagina is dealt with by Fisher of Philadelphia; the surgery of the uterus, broad ligaments, and tubes by Montgomery, who enters a plea for the pessary, the uses of which seem not to be appreciated on the other side of the Atlantic. Such, at least, might be inferred from the numerous operations, including one of the author's, described for the relief of retrodisplacements. It strikes one that the space devoted to hysterectomy is disproportionately small. There is a short chapter on surgical technique by Gibbon, which is sufficient, but no more. Ligation of arteries in their continuity and amputations are familiar friends, for they are by Warren Stone Bickham; and no more need be said, unless it be, with diffidence, that it would perhaps have been a good place to strike out a new line and relegate two-thirds of the set operations to the oblivion they deserve, and would experience but for examiners. Dr. Warbasse writes about operations on bones and joints; he gives directions for dealing with acute osteomyelitis which indicate complete appreciation of recent ideas about the pathology. He overrides accepted ideas when he says that while "the earlier operators laid stress on the kind of tumour that the surgeon had to deal with, I believe that this need be given but little consideration." The author of the section on plastic surgery, Dr. Roberts, has suffered severely from limitation of space; but what can be done outside the pages of a special treatise he has done with discretion. The surgery of accidents, by Estes, is more than a recitation of surgical principles; he deals with the subject as one must who has had very special opportunities and realizes that success in this field depends more on organization for bringing the injured and the skilled surgeon together quickly, and without meddling intervening, than on questions of practice. It is obviously, in his view, a sociological problem. He observes that "malingering among working people . . . is very rare. . . . It is quite another story when it comes to the so-called better classes." American experience seemingly differs widely from our European.

Mr. Charles Mayo has a chapter on the surgery of the parathyroid bodies which will surprise a good many steady-going surgeons, but which, after all, does not advance matters very materially. Dr. Frazier considers the intracranial surgery of the fifth and eighth nerves, favouring division of the sensory root of the Gasserian ganglion by the auriculo-temporal route. General anaesthesia and anaesthetics are treated in somewhat academic fashion by Hobart Amory Hare; local analgesia by Lennander, who unhappily did not live to complete his task. His article is the work of an enthusiast, and should do not a little to extend the use of the method in this country. Some of his feats, such as disarticulation at the hip under infiltration and endoneural analgesia, sound too wonderful for realization. Subarachnoid methods are described by his pupil Zachrisson, who shares his views as to the severe limitations proper for its employment. Professor Armstrong of Montreal has a chapter on the surgery of the infectious diseases, which, though necessarily scrappy, has some useful information on points such as "typhoid spine." Mr. Carson's pages on the legal relations of the surgeon have less interest for those who live beyond the pale of American law, but his statement of his principles is clear and sound. Dr. Coplin takes as his subject the laboratory as an aid to technique and diagnosis, whilst Ochsner brings the volume to an end by valuable suggestions for the surgical organization of a hospital.

The bibliography attached to each section increases the value of the system as a work of reference, but the index, though good, is hardly worthy of the high standard set in the text.

SURGICAL NURSING.

THE day has long gone by when every woman was supposed to be an ideal "nurse" simply because she wore a petticoat. The modern surgical nurse is a highly-trained

[2] *Surgery: Its Principles and Practice.* Edited by W. W. Keen and J. C. DaCosta. Vol. V. 1909. Philadelphia and London: W. B. Saunders Company. (Roy, 8vo, pp. 1274; 550 illustrations. 30s.)

and disciplined unit in the organized scheme of asepsis. Her habit and her conscience must be as inflexible as the surgeon's if results are to be satisfactory. A receptive intelligence, capacity for hard work, and initiative without independence are essential. All these qualities seem to be forthcoming in plenty, but, after all, they do not make a "nurse"—one thing is lacking. It is just because there is a danger of forgetting the one thing lacking that Mr. STANMORE BISHOP has thought fit to introduce into his excellent little book of *Lectures on Surgical Nursing*[3] a chapter on "altruism." The Anglo-Saxon does not take kindly to the display of altruism. Amongst doctors it happens not infrequently that those who practise altruism most unflinchingly in their work most belie it in their words. But just as the young doctor has to learn that he treats, not diseases, as his textbooks have taught him, but human individuals, so nurses have to learn that the most perfect system will fail if she have not cultivated that temperament, that grace of manner, and that *savoir faire* which enable her to enlist the services of a whole household in the performance of tasks which seem to them irrelevant and unnecessary, and to secure their abstention from the promptings of well-meaning but ignorant altruism. The modern surgical nurse amongst private patients needs the most whole-hearted spirit of unselfishness; she labours that another may take the reward. To her, as Mr. Bishop says in his graceful introduction, a great part of any success attained by the surgeon is owing. To ingratiate herself with a household, to divine her patient's character and adapt herself to it, to transform a house into a suitable place for operation without disturbing its routine or upsetting its mistress, to act as the surgeon's right hand and right eye, to forget nothing save her own personal interests, and through it all to adopt her patient's point of view, is a task which brings only its own reward, but it is worth doing, and it is done every day. A great many books for nurses nowadays contain much information that is unnecessary. It is idle to try to teach nurses in a few lectures or pages what it takes a medical student months to learn in a laboratory. This little volume hits off almost exactly the proper line to take in telling nurses about the true inwardness of the system they are to be taught to observe. It is to be commended to the attention not only of those who are beginning their training, but even to those superior persons who know all about bacteriology, whose experience by now is all-embracing, and who are forgetting that there is anything left to learn. The human side of a nurse's work is an inexhaustible source of new knowledge, and the humane attributes of character are ever in need of cultivation.

TREATMENT OF TUBERCULOSIS.

THE record of observation and work in open-air sanatoriums contained in Dr. MUTHU'S *Pulmonary Tuberculosis and Sanatorium Treatment* is both interesting and valuable, for the author stimulates thought by his broad views on life in relation to disease, and has wisely based the clinical portion of the work on the results of his own observation and experience.[4] The subject is divided into three parts, dealing respectively with the scientific aspect of tuberculosis, the sanatorium treatment, and the social aspect of the disease. In the first part, and more particularly in the introduction, Dr. Muthu gives us glimpses of a philosophic trend of thought which is as refreshing as it is uncommon in medical textbooks. Western medical training may, as he says, tend to view life from a physical standpoint, but this training has fortunately not completely overcome the author's temperament. Here and there throughout the book we come across views which are not entirely in accord with those generally held by the profession, but it is one of the interests of the book that the author is not afraid to think for himself and to express his thoughts boldly. Dr. Muthu considers that the present tendency is to exaggerate the part played by the tubercle germs in the causation of tuberculosis. We are inclined to agree with him when he says that the soil much more than the seed controls the disease, though we cannot follow him in his conception of tuberculosis originating without the bacillus. In the second part of the book, on the sanatorium treatment, Dr. Muthu's ten years' experience enables him to speak with authority. He utters a much-needed warning against expecting success in treatment after a few weeks. He puts the shortest stay in a sanatorium to bring about recovery at six months for an early case. He makes an excellent suggestion—which he has carried out in his own sanatorium—in advocating camping-out for the patients, either in some part of the estate, the camping party doing their own cooking, etc., or making a caravan tour of the neighbouring country. It will be seen that this book is something more than a mere recapitulation of ideas and facts gleaned from other writers. It is pleasantly written, and embodies a good deal of original thought and observation. By a curious mistake the name of the author is given on the cover as D. J. A. Muthu.

Dr. RUFENACHT WALTERS'S book on the *Open-air or Sanatorium Treatment of Pulmonary Tuberculosis*[5] is an excellent handbook of the subject with which the author is thoroughly conversant. The book is divided into two parts. The first portion gives, in considerable detail, all the essential elements of sanatorium treatment and the hygienic principles on which they are based—as Dr. Walters in his preface expresses it, "matters which an intelligent patient should know." Reference numbers in the text refer to corresponding paragraphs in the second portion of the book, which contains the more technical matter. Little that any superintendent of a sanatorium for consumptives should know will he fail to find in this book. Construction of buildings and shelters, ventilation, routine, feeding, rest and work, disinfection—all these are reviewed and discussed with the knowledge gained by the practical experience of the personal management of such an institution and a wide acquaintance with sanatoriums in other countries. In Part I we would especially draw attention to the common-sense remarks on the selection of a place for treatment (in Chapter IV), and the section on travelling (Chapter XXVI). The medical reader will find many details of treatment which bear the stamp of personal experience, and in the second portion of the book there is much in the section on treatment of symptoms—for example, cough, haemoptysis—which will be helpful to many. Dr. Walters discusses very fully the specific treatment of tuberculosis: he is a follower of Wright, though he does not by any means ignore the methods of others. The section on dietetics is very good, and those who have to arrange the dietary in sanatoriums and similar institutions will be grateful for the list of articles of food in which food values and calories are given. The book may be confidently recommended to all who wish for information on the details and principles of the sanatorium treatment of the tuberculous.

Drs. BAUER and ENGEL have combined to publish in one volume[6] several contributions on the subject of tuberculin in the tuberculosis of childhood. The first and most important paper is one by Dr. Engel on the reaction of tuberculosis in childhood to tuberculin, which, with the record of cases and temperature charts, occupies the greater part of the volume. He considers the subject under various headings, commencing with the technique of tuberculin administration, the dosage for children, and the method of using the remedy so as to produce the most satisfactory and lasting effects. The results of a very full investigation into the effects of the inoculation of tuberculin in children are given, together with practical deductions as to various points in reference to its employment. Thus we find investigations as to the best initial dose, the rapidity of increase and the maximal dose, and the length of time for which the injections should be continued. The first essential is to avoid too large an initial

[3] *Lectures on Surgical Nursing.* By E. Stanmore Bishop, F.R.C.S. London: Simpkin Marshall; Bristol: J. Wright and Sons. 1909. (Fcap. 8vo, pp. 143; illustrations 9. Cloth, 2s. 6d; leather, 3s. 6d.)

[4] *Pulmonary Tuberculosis and Sanatorium Treatment.* By C. Muthu, M.D. London: Baillière, Tindall, and Cox. 1910. (Demy 8vo, pp. 213; illustrations 6, plates 10. 3s. 6d.)

[5] *The Open-air or Sanatorium Treatment of Pulmonary Tuberculosis.* By F. R. Walters, M.D., B.S.Lond. London: Baillière, Tindall, and Cox. 1909. (Demy 8vo, pp. 339; ill. 29. 5s.)

[6] *Klinische und Experimentelle Studien zur Pathologie und Therapie der Tuberkulose im Kindesalter.* Von Dr. Bauer and Dr. Engel. Sonderdruck aus *Beiträge zur Klinik der Tuberculose.* Herausgegeben von Professor Dr. L. Brauer, xiii Bd., Heft 3. Würzburg: C. Kabitzsch (A. Stuber). 1909. (Sup. roy. 8vo, pp. 245-457. Taf. ii, Abb. 4. Mk. 6.50.)

dose, and Dr. Engel advises strongly that the child should be kept strictly in bed during the injections. The severity of the tuberculin reaction cannot be measured by the height of the temperature alone; the duration of the reaction must also be taken into consideration. Children show considerable differences in their resistance to or tolerance of tuberculin; but Dr. Engel points out that the susceptibility to tuberculin varies not so much according to age as with the site, extent, and degree of activity of the tuberculous process. Lung cases are more intolerant than cases of bone, joint, or gland tuberculosis. Since the usual seat of tuberculosis in children is in the glands—a condition in which there is comparative tolerance of tuberculin—while in adults the seat of disease is usually in the lungs—a condition very intolerant of tuberculin—the relative doses for children and adults are not proportionate to the age. In discussing "latent" tuberculosis, Dr. Engel prefers to use the term "occult" in reference to children as expressing an ever-present source of danger though its presence may not be evident. A section is devoted to indications and contraindications, from which it would appear that the conclusions of the author would support the views of those who hesitate to employ tuberculin in tuberculosis of the lungs, though they use it in cases in which these organs are not affected. The article is illustrated by numerous temperature charts and records of cases, photomicrographs of fibrous tubercles, and some skiagraphs of tuberculosis of bones. A second article by Dr. Bauer, on immunity in tuberculosis, and a third by the two authors conjointly, on tuberculous immunity and specific therapy, complete the volume, which forms an important contribution to the study of the specific treatment of tuberculosis.

SCIENCE AND IMMORTALITY.

DR. MACFIE'S latest work, *Science, Matter, and Immortality*,[7] is dedicated to Sir Oliver Lodge. The title and dedication afford an indication of the scope and purport of the book, which may be briefly summarized as the application of the latest conceptions of matter to the problems of life and immortality.

A historical summary is given of the views which have been held as to the nature and origin of matter from the earliest times to the present day. The more materialistic of the ancient classical writers—for example, Diogenes of Apollonia, Heraclitus, and Empedocles—attributed the source of all things to fire, air, earth, or water; Pythagoras to number; while the more mystical Anaximander regarded the infinite as the first element of things. These speculations form interesting reading, and it is worthy of note that the underlying idea of Dalton's atomic theory seems to have been foreshadowed in the minds of some of these ancient philosophers.

The author carries us through the speculations of Bruno and Maemonides, of Leibnitz and Descartes, of Boscovitch and Schopenhauer, to the time of Kelvin, J. J. Thomson, and Rutherford. The modern theory of electrons is expounded in a clear and graphic manner. It is a veritable fairy tale. Science has indeed opened to us "wide, wonderful, and mysterious horizons." Matter becomes unthinkable. When we are told by Larmor that the "material molecule is entirely formed of ether and of nothing else," and by the late Lord Salisbury—a no mean physicist—that "ether is but the nominative case of the verb to undulate," it is difficult for one who is not a professional physicist to collect his wits.

No less fascinating is the account given of the modern hypotheses of cosmogony and their relation to astronomy in general. The application of the electron theory to organic life is discussed. The author believes in the idea, now held by an increasing number of scientists, of the evolution of the organic from the inorganic.

Scissors and paste have largely been made use of in the first seventeen chapters, but the compilation has been well done, and we turn with interest to the remaining chapters in the hope of finding the author's own conclusions and applications in reference to immortality. These appear somewhat nebulous. He hints at a possible psychical application of the electron theory, but expresses the belief that the ultimate verdict must rest with philosophy; science cannot solve the riddle. Though a corporeal resurrection seems wellnigh impossible, death does not of necessity mean for him a total and synchronous loss of consciousness. The author's creed, though ill-defined, is cheerful and optimistic. The future evolution of man will, in his opinion, be mental and moral rather than physical, the two main factors in this evolution being "microbes and marriage." In the concluding chapter there is a plea for a wider sympathy among scientific men with poetry, philosophy, and literature, to prevent a too cramped and narrow outlook. With such a plea we are in entire agreement.

The book is of considerable interest, and is written in an easy, pleasant, and at times even an amusing manner. That the author can write with vigour is shown when dealing with the fallacies of that "most cowardly and vulgar religion," Christian Science. It is a pity that the book is marred by the too frequent use of alliterations, often very forced.

[7] *Science, Matter, and Immortality.* By Ronald Campbell Macfie, M.A., M.B., C.M. London: Williams and Norgate. 1909. (Cr. 8vo, pp. 308. 5s.)

PATHOLOGY OF RABIES.

THE *Observations on Rabies* by Major LAMB and Captain MCKENDRICK are concerned with several points which are of scientific interest in connexion with the nature of this disease.[8] It has frequently been asserted that by passage through certain species of animals, such as the monkey and the dog, rabies virus lost its virulence, and ultimately became innocuous. The experience of the authors, however, is opposed to this view. They obtained a virus from a street dog, and after passing it through a series of thirteen dogs they found that it had become increased in virulence not only for dogs but also for rabbits. In the course of the routine work of the Pasteur Institute of India, the authors have noted several cases in which subdural inoculation of street virus produced a peculiar form of rabies in the rabbit. The animals remained in good health for a time, and then gradually became emaciated, and died without developing the usual symptoms of rabies in the rabbit such as paralysis and tremor. In most instances the progress of emaciation was slow, and the disease lasted for a month or more. In some cases, however, wasting set in very rapidly after infection, and death took place within ten days of the inoculation. The fact that the conditions observed were true rabies was proved by producing typical symptoms of rabies in animals inoculated with material obtained from this peculiar atrophic variety of the disease. This variety was observed also in a dog which had been spontaneously infected. The authors also record some observations on the susceptibility of various species of animals to subcutaneous inoculation with rabies virus. Guinea-pigs they find, can be infected with comparative ease by subcutaneous inoculation of a small quantity of fixed rabbit virus, and are equally susceptible to subcutaneous inoculation of virulent dog virus. Rabbits are also susceptible to inoculation by this method with fixed rabbit virus, but the disease which results is often of a more or less chronic nature, mainly characterized by progressive emaciation without any definite paralysis. Monkeys can be infected by sucutaneous injection of fixed rabbit virus, though in these cases the incubation period is much prolonged. It was found that passage through a single monkey greatly prolonged the incubation period of fixed rabbit virus for rabbits. All these observations of Major Lamb and Captain McKendrick are, as they admit, "somewhat fragmentary and by no means exhaustive"; but they are none the less interesting.

INFECTIOUS DISEASES IN SCHOOLS.

IT is no mere polite form of words to say that we welcome most heartily the appearance of a new edition of the *Code of Rules for the Prevention of Infectious and Contagious Diseases in Schools*, issued by the Medical Officers of

[8] Scientific Memoirs of the Government of India. New series. No. 36. *Observations on Rabies; with Special Reference to an Atrophic Form of the Disease occurring in Animals.* By Major G. Lamb, M.D., I.M.S., and Captain A. G. McKendrick, M.B., I.M.S. Calcutta: Government Press. 1909. (Med. 4to, pp. 34. 9d.)

Schools Association.[9] The first edition was published twenty-three years ago, and the new edition is the sixth. The code has therefore stood the test of time. It has been continuously revised in the light of school experience, and is the work of men who are constantly being called upon to deal with the practical questions it is designed to answer. It will be most useful to general practitioners, for though the questions may be asked them less frequently quite as much depends on their correct answer. It contains the best opinion of the day, and expresses with a degree of authority which will not only fortify the confidence of the doctor, but will help him to carry conviction to the mind of a reluctant parent. The acute infectious diseases dealt with are: Varicella, diphtheria, rubella (German measles), epidemic roseola, measles, mumps, scarlet fever, small-pox, and whooping-cough, and there are notes also on ringworm and ophthalmia. The scope of the work can perhaps best be shown by giving the headings of the sections. The first deals with general hygiene and the arrangement and inspection of school premises; the second with the infirmary and sanatorium; the third with the medical examination of scholars on admission; the fourth with general precautions against the introduction and spread of disease; and the fifth with the measures to be adopted when an infectious disease has appeared in a school. There are three appendices—the first gives forms of certificates suggested for use with reference to the prevention of infectious diseases in schools; the second is on the notification of infectious disease; and the third, by Dr. A. C. Houston, on disinfection.

TERATOLOGY.

WE associate a work on teratology with an atlas, but atlases have their disadvantages, which Dr. BIRNBAUM has avoided in his *Klinik des Missbildungen*.[10] With the exception of one plate of skiagrams, the forty-nine remaining illustrations are incorporated with the text. The resources of photography, not altogether satisfactory for high art and portraits, allow of very correct representation of monsters at a far smaller expenditure than was demanded by older pictorial methods. The majority of its illustrations are taken from original photographs of specimens in the museum of the Frauenklinik in the University of Göttingen. They are highly instructive, and we may single out as examples Fig. 21, which represents fetal hydrocephalus with oedema and adiposity of the neck; and Fig. 24, the photograph of a case of malformation of the outer ear. In Fig. 21 the fat neck and shrunken integuments of the abdomen come out clearly; in Fig. 24 not only is the deformity of the pinna manifest, but the shiny, greasy fetal skin is quite true to nature. Again, Fig. 37—"chondrodystrophia fetalis"—is a most beautiful portraiture of a most unlovely fetus. As these forms of malformation, difficult to represent, are so successfully demonstrated by illustration in this work, we need hardly add that the more familiar double twins, fetal parasites, acardiacs, and anencephali stand out plainly in all their natural interesting hideousness so familiar to us. The few illustrations taken from other works compare unfavourably with the original photographs from the Göttingen Museum. Dr. Birnbaum describes each type of monstrosity very clearly in the text, and, admitting that the literature on teratology is voluminous, adds full references to authorities, from St. Hilaire to Ballantyne. His aim, as he declares in his preface, is to present the reader, especially the student and the busy practitioner, with a manual which is an epitome of teratological facts hitherto widely scattered over costly atlases and the medical press of the Continent and Anglo-Saxondom. The *Klinik des Missbildungen* will prove of much value to the practitioner, and, as it contains copious tables of references down to 1908, it is an important work of reference, which deserves a place in every medical library.

[9] *A Code of Rules for the Prevention of Infectious and Contagious Diseases in Schools.* Issued by the Medical Officers of Schools Association. Sixth edition. London: J. and A. Churchill. 1910. (Demy 8vo, pp. 64. 1s.)

[10] *Klinik des Missbildungen und kongenitalen Erkrankungen des Fötus.* Von Professor Dr. R. Birnbaum. Oberarzt der Kgl. Universitäts-Frauenklinik zu Göttingen. Berlin: J. Springer. 1909. (Sup. roy. 8vo, pp. 284, 49 Textabbildungen und 1 Tafel. M. 12.)

NOTES ON BOOKS.

The Chauffeur's Companion,[11] by "A Four-inch Driver," is a very practical little book, and will be useful to the man who is his own driver. It will help him in the choice of a car, but its particular object is to teach him how to prevent unnecessary wear and tear and breakdowns—the alpha and omega of motoring, whether for business or amusement. It is illustrated by some mechanical drawings and diagrams, which will help, so far as such aids can, to an understanding at least of the principle of the internal combustion engine. The rest must come with experience and practice.

A general election in January is very inconvenient to compilers of annuals. The publishers of *Whitaker's Almanack* have endeavoured to meet the difficulty this year by issuing a *General Election Supplement*, price 1d., giving alphabetical lists of constituencies and members of the new House of Commons and of unsuccessful candidates, together with some statistics of the balance of parties in this and in the last House of Commons. The issue is, perhaps, a little premature, as there are three constituencies in which the results could not be stated, and the alterations in the Government which must be made owing to Mr. Herbert Gladstone's appointment to South Africa, and other causes, cannot be shown.

The edition for 1910 of *Nisbet's Medical Directory*[12] reached us on the first day of this month, and the annual would appear to have become established in the favour of the profession. It consists of two parts: the first contains in alphabetical order on a single list the names of, we presume, all registered medical practitioners; the second part is a local list, the names in the first part being arranged under places with, in the case of London, a further subdivision by streets or suburbs; in Manchester, Birmingham, Liverpool, and Glasgow also the suburbs are distinguished. The publishers' claim that this directory is handy and accurate appears to be fully justified; and as to the further claim that it is inexpensive, every one can judge for himself.

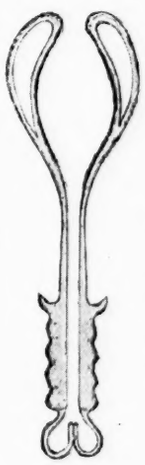
[11] London: Mill and Bowne. 1909. (8vo, pp. 162.)

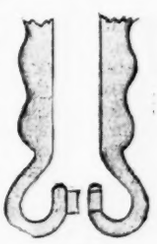
[12] *Nisbet's Medical Directory, 1910.* London: J. Nisbet and Co (Demy 8vo, pp. 802. 7s. 6d.)

MEDICAL AND SURGICAL APPLIANCES.

An Improved Midwifery Forceps.

THE numerous good points in Assilini's Midwifery Forceps have made them favourites with many practitioners. They have, however, a drawback in that the handles are not powerful enough, and fail to provide a good grip for the hand. Dr. Richard J. Tristan, of Retford, has overcome this defect in the pattern of forceps here illustrated. Briefly, his design is the combination of the Simpson pattern of handle with the Assilini blades. The result is a beautifully balanced and powerful forceps, which we feel sure will be much appreciated. The forceps are made by Messrs. Sharp and Co. 37, Piccadilly, Manchester.





Showing the lock.

Insulated Wires for Medical Electricity.

We have received from Messrs. E. Kalker and Company, of Coventry, some samples of their standard insulated wires and cables for low and high tension. In the samples forwarded to us the tinned copper wires are very carefully insulated with heavy layers of pure india-rubber, the diameter in some cases being more than half an inch. Medical men will appreciate their perfect insulation when using them in connexion with *x*-ray work and medical appliances and batteries. Messrs. Kalker state that they supply cables with lead covering when it is necessary to protect them from injury.

Dr. Burney Yeo's Respirator.

This respirator, made by Squire and Sons, at the suggestion of Dr. Burney Yeo, for purposes of continuous antiseptic inhalation, is referred to in Dr. Yeo's *Handbook of Therapeutics*, vol. i. It is made of pliable perforated

zinc, and is supplied to the profession either uncovered, price 5d. each net, or covered with silk, price 8d. each net. As it is made of a pliable material its shape can be adjusted to suit the form of the face. The usual substances for inhalation are creosote, liquefied carbolic acid, oil of turpentine, formaldehyde, eucalyptus oil, terebene, spirit of camphor, solution of tar in rectified spirit, solution of menthol, tincture of benzoin, and tincture of iodine. The composition of the liquid required for inhalation can be modified to meet the special requirements of each case. The felt pad with which the inhaler is fitted can be taken out and replaced with cotton-wool or tow, which will be found useful for such resinous tinctures as compound tincture of benzoin. In a recent paper (BRITISH MEDICAL JOURNAL, 1909, vol. ii, p. 1659) on the physical signs of incipient pulmonary tuberculosis and its treatment by continuous antiseptic inhalation, Dr. Lees referred to the use of more or less specialized formulas, such as 6 to 8 drops of a liquid containing acid carbolic, creosote, tincture of iodine, spirits of ether, and spirits of chloroform; or 10 to 20 drops of a mixture containing ethereal tincture of iodine, acid carbolic, creosote and thymol, and alcohol.

Electric Light and Heat Baths.

Radiant light and heat as therapeutic agents have now a considerable weight of authority behind them, and their value has been proved, particularly in the treatment of the various forms of arthritis. A catalogue which reaches us from the Dowsing Radiant Heat Company, Limited, of 24, Budge Row, E.C., is occupied mainly with the description of a convenient means of applying these agents in the form of the "Solarium," or "electric sun bath." We have had the opportunity of examining the various patterns of this bath at the Dowsing Institution in York Place, Baker Street, and can testify that the practical conveniences claimed for it are in no way overstated. The patterns range from special folding cabinets to small portable designs, and each bath is fitted with four, six, or eight electric lamps, with reflectors of aluminium or other metal, and controlling switches, by which the user himself can regulate the amount of heat thus directed upon his person. It is difficult to see how the tonic effects of combined light and heat could be more readily obtained. At the institutions it is expressly stipulated that the treatment shall only be given by the order of a medical man.

MEDICINAL AND DIETETIC ARTICLES.

Bromural.

BROMURAL is the short name given to α-monobrom-isovaleryl-urea, which is one of the most recently introduced synthetic hypnotic drugs. As the chemical name indicates, the relation of this substance to either veronal or sulphonal is not a close one; the intention has been to obtain something of the nerve-soothing properties of valerian by preparing a derivative of isovalerianic acid, while the presence of bromine in the grouping gives a more distinct hypnotic effect. It is claimed that the result is quite satisfactory, and that bromural is a gentle sedative, free from harmful effects. Samples of bromural in powder and tablets have been submitted to us by the makers, Messrs. Knoll and Co. (8, Harp Lane, London, E.C.); it is a white crystalline substance of slightly bitter taste, nearly insoluble in cold water, but fairly soluble on heating, neutral in reaction; the tablets contained 5 grains each, and disintegrated rapidly when placed in water.

Styptol.

In addition to the many natural alkaloids which are of value in medicine, and others of purely synthetic origin, certain artificial derivatives of natural alkaloids have proved to be of use, and one of the most important of these is cotarnine, an oxidation product of the opium alkaloid narcotine. Cotarnine is principally employed in the forms of the hydrochloride and the phthalate; Messrs. Knoll and Co. (8, Harp Lane, London, E.C.) draw attention to the many favourable reports on the latter salt, which is manufactured by them, and issued under the name "styptol." Cotarnine phthalate, or styptol, possesses an important haemostatic action, and since this appears to be unaccompanied by the ecbolic action of ergot, it is particularly recommended for employment during pregnancy. Messrs. Knoll and Co. submit samples of the sugar-coated tablets in which they supply this drug, each containing ¾ grain; on account of their small size and the sugar coating they are very easily administered.

FOOD AND FEEDING.

Introductory.

PERHAPS never before has food been so abundant, varied, and cheap as it is in England at present, but certainly at no time has it been the subject of so much public discussion among the votaries of different systems of feeding. It is, moreover, a new departure to find an organized body like the Food Reform League attempting to make questions of dietetics an issue at a general election, and to get candidates to pledge themselves to certain parts of their programme. If food is the most important of human considerations—for although man does not live by bread alone he cannot live without it—we may yet feel that there is some exaggeration in this agitation, that human health and happiness do not depend upon whether we eat brown bread or white, or go without breakfast or abstain from meat or purins. To the writers and readers of the *British Health Review* the future of England depends upon their success in impressing their views upon the people of this country and converting them into a race of vegetarians. The justification often pleaded for this extreme mode of stating opinion is that it is necessary in order to arrest attention; measured statements are platitudes which no one regards, but paradoxes containing a germ of truth attract notice by their violent opposition to popular opinion, and arouse public discussion out of which it is hoped the slender body of truth may emerge. It is repugnant to the scientific mind to advocate truth by means which involve the large amount of misstatement to be found in the writings of these food reformers, but we desire to do justice to what is praiseworthy in their aims and correct in their statements.

It is unfortunate that the abundance of cheap and varied food has not given us a healthier and better-nourished population, for the wage-earning classes of the present day are notoriously less robust physically than they were a hundred years ago; this is true not only of factory workers who live in towns but of farm labourers and Highland cotters. The present cheapness of dietetic luxuries has proved an evil; cheap tea and cheap sugar have done disservice to our people, while the relative cheapness of meat, especially tinned meat, has induced a disproportionate expenditure on an article of diet the dietetic value of which is over-estimated.

It is often held that the general experience of the race is a sufficient guide to the choice of food, but this can hold good only where the conditions remain the same for a long period of time. If they have altered, as has happened to a remarkable degree in England during the last hundred years, the people are called upon to learn a new lesson without the guiding light of experience. Articles of food are now abundant and cheap which a generation or two ago were hardly obtainable by the poor; they may now consume daily what were formerly the rare and costly luxuries of the rich. Therefore, while it is probably true that in course of time the mass of the population learns the right road, it is rash to assume that this must infallibly be chosen from the beginning.

All who have studied the housekeeping budgets of the modern poor agree that these might be improved both economically and dietetically, as too much money is spent on certain classes of food in proportion to the food value obtained. The working man's wife lays out her money upon ready-prepared articles of food which save cooking, but the food costs more than those her mother bought, and contains less nourishment.

Oversea commerce brings year by year into England more and more of the products of distant countries, and the people are being fed mainly on exotic food. If it were as wholesome and nutritious as it is cheap there would be no ground for complaint. But is it so? Why should we assume that the popular taste is a safeguard, and that the rule *caveat emptor* sufficiently protects the purchaser? Taste requires educating, and the ignorant buyer is easily deceived. The State should not allow the fear of interfering with trade to prevent due inquiry, uninfluenced by commercial considerations, into the effect of foreign food upon the health of the people. The reduction of the duties on tea and sugar has led to an increased consumption of these articles which has not been altogether to the advantage of the health of the people. If cheap tea, sugar, and meat are bad things, they should be taxed, as alcohol is taxed

to diminish its consumption. Dentists agree that the main cause of the early decay of teeth which prevails among the present generation is the excessive amount of soft starchy food and sugar in the diet of the people, especially of children. Bread containing a certain proportion of bran requires more mastication, and would act as a natural cleanser of the teeth. When Englishmen ate coarser bread and their food was rougher their teeth were better. Decayed teeth lead to imperfect mastication, impaired digestion, defective nutrition, and consequent inefficiency. It is hopeless to cope with this evil by dentistry, however skilful; we must search out the cause, and having found it, remove it if that be possible.

Politicians and social reformers have hitherto regarded cheap food as a short cut to the millennium, but this is an illusion. Cheapness may only be apparent, and tends to breed waste and an undue indulgence in dietetic luxuries. The progress of evolution has been rapid during the last hundred years, but its result is not always favourable; it is as powerful to destroy as to create, and those conditions which time has brought about have been operating adversely to the physical wellbeing of the people. So long as the income-tax returns rise statesmen are content to believe that all is well; but, in spite of the advance in wealth and of much well-meant legislation in the interests of the masses, their physical condition has deteriorated, and this process will go on so long as the present conditions are regarded with complacency, and nothing is done to remove the causes that are at work. If we desire to see a healthier population grow up in these islands we must alter the conditions which have proved prejudicial in the past.

We may now consider some of the multitude of schemes and systems proposed.

The No-Breakfast Plan and the Fasting Cure.

The apostle of the fasting cure was the late Dr. E. H. Dewey, who, after an inadequate medical education at the University of Detroit such as obtained fifty years ago, had a chequered experience as surgeon in the United States army during the civil war, and later as a general practitioner, without, it would appear, attaining any conspicuous success until he hit upon his great discovery. This was that most people in America ate more than was good for them, and that many of their troubles could be relieved by partial or total abstinence. The plan he recommended at first was to allow only two meals a day, suppressing breakfast; but afterwards, growing bolder, he prescribed prolonged fasts, and in this method—which it might be thought would not be very popular—he has had followers. One of his disciples, a Mr. Carrington, published a book, reviewed in this JOURNAL at the time (July 4th, 1908, p. 28) in which he contended that food is not a source of energy or of body heat; but Dr. Dewey (*No-Breakfast Plan and the Fasting Cure*, 1900) does not commit himself so clearly. It is in the United States that the gospel of "three square meals a day" has received the most complete acceptance. An English breakfast is regarded as meagre, and it is easy to understand that in a country where all classes eat three daily meals composed of meat, cereals, fruit, and vegetables, there is room for reform by way of diminution of the intake.

Dr. Dewey's book is not so written as to carry conviction to the medical mind. In the beginning of the second chapter a case is described which is called in the index typhoid fever; but the only details given are that the patient was "a sallow, overgrown girl, with a history of several months of digestive and other troubles," who had been so "sick that for a period of three weeks not even one drink of water was retained"—a history not very suggestive of typhoid fever. Further on in the same chapter another case is related of "diphtheria," treated by two of his "ablest and most experienced medical friends" with "all the strong whisky possible to be forced into the stomach," in spite of the throat being in such a condition that swallowing was painful and difficult! Dr. Dewey was perhaps unfortunate in his colleagues, and a policy of mere abstention may have been an advance on their meddlesomeness; but his criticisms are irrelevant to modern European methods. He was not an accurate or careful writer, and in some cases indulges in misstatements; for instance (on page 29), he writes:

Sir William Roberts of England, in his exhaustive work on *Digestion and Diet*, asserts that milk curds are not digested in the stomach during sickness, but are forced into the duodenum, where, he asserts, they are digested; but he gives no reason for his faith that there is power to digest in the duodenum when there is none in the stomach.

Now Sir William Roberts's book on *Digestion and Diet* made no claim to be "exhaustive," and he nowhere makes the statement attributed to him. What he does say is:

If milk be given too freely, or when there is excess of acid in the stomach, the curds may fail to be dissolved, and may pass into the intestine more or less unchanged and are ultimately voided with the stools (p. 183).

Dr. Dewey condemned most articles of food, especially milk; he denounced "the irritating effect of fruit acid on the stomach," but added that tropical fruit was "without acid"! "Acid fruits" could "only be taken with apparent impunity by the young and old who can generate gastric juice copiously"! These extracts illustrate the type of writer, but there are passages in the book of an uglier kind in disparagement of his profession which we forbear to quote. In support of his views Dr. Dewey refers to the writings of Dr. George Keith, who practised in Edinburgh a generation ago, and whose death was recorded in the JOURNAL of January 22nd, 1910. He was an enemy to "butchers' meat," and treated his patients by short fasts with hot water to drink, but his was a moderate and reasonable practice, doubtless suitable for certain cases; with Dr. Dewey it was an all-round remedy, and he claimed to have conducted fasts of twenty-eight, and even sixty days, though not without fatal results. There are not many people disposed to follow Dr. Dewey in these long fasts, but in acute diseases the need for food is probably overestimated and the merits of abstinence insufficiently appreciated. A short time ago the Vienna newspapers were publishing an alleged English cure for a cold, attributed to the late Dr. C. J. B. Williams, its essence being abstention from food and drink for twenty-four hours—a valuable plan, possibly, if combined with rest in bed. Typhoid fever is usually treated nowadays with little food; many physicians give only albumen water, others whey, while an Australian practitioner has advocated nothing but distilled water; and although most practitioners prefer the *via media* and allow diluted milk, yet the results of the other methods are not unsatisfactory, and few could claim with justice the epitaph of Graves so far as typhoid fever is concerned.

In chronic diseases there is considerable risk in going without food or reducing it to a minimum. Such a practice appeals chiefly to neurotic individuals whose ailments are functional, and who are destitute of the healthy desire for food. Such patients eat little at any time, and suffer from general debility dependent upon insufficient nourishment, hence the success of the cure by copious feeding tempered by massage introduced by Dr. Dewey's fellow-countryman Dr. Weir Mitchell. All that Dr. Dewey's cases prove, assuming that he was not deceived, is that neurotic zealots can go without food for long periods, but that we knew before, and there is nothing in his book to show that fasting as a panacea is other than a foolish delusion.

Fletcherism.

The system of dietetics of which Mr. Fletcher is the prophet has attained a certain repute in the medical profession owing to the interest in the metabolic problems involved taken by physiologists like the late Sir Michael Foster and Professor Chittenden; but his "system" has little or nothing to do with the questions that interested them, and he has no right to quote their researches as if these eminent men supported his physiological principles. Mr. Fletcher, like Dr. Dewey, is an American, and America is not only the country where people eat too much, but also where they bolt their food, and, as Dr. Dewey led a crusade against overfeeding, so Mr. Fletcher protests against the neglect of mastication. Both alike carry principles which are fundamentally right to an irrational extreme. Mr. Fletcher's system is to chew each mouthful of food until it is reduced to a liquid, and to swallow this liquid only, removing the solid residue with the fingers from the mouth. He claims for this plan that all digestive troubles cease, that a relatively small amount of food is sufficient to satisfy appetite, and that, though there is a

loss of body weight, the general health and activity are more than maintained. Of himself, he says that he has cured a man who was a chronic invalid, but who has since attained to a standard of athletic efficiency sufficiently remarkable for one of his age. Mr. Fletcher submitted himself for examination at the Cambridge physiological laboratory, with the result that Sir Michael Foster was convinced that he did not exceed the quantities of food stated by him, and this conclusion was subsequently confirmed by Professor Chittenden.

The Superintendent of the Gymnasium at Yale has testified to Mr. Fletcher's athletic performances, and there can be no doubt that upon a diet which contains about 1,600 heat units and 60 grams of proteid he maintains himself in perfect health and fitness. The main point at which we diverge from Mr. Fletcher is on the importance of such prolonged mastication as he advocates, and the need for removing all solid residue from the mouth. He argues that it prevents a large amount of waste reaching the bowel, where he thinks it exercises an injurious effect on the body. He says "the mere passage of waste through some 20 to 25 ft. of convoluted intestinal canal is a great tax upon available mental and physical power"; and he regards it as a great advantage of his system that the amount of faeces is small, and that a daily movement of the bowel is unnecessary. This is not in accordance with general experience or with physiology, as even in starvation (Fr. Mueller) there is a considerable amount of faeces, as was seen in Cetti's fasts, while the remarkable feature of that case was that the excretion of indol rose considerably. In the experiments of Hermann on dogs a loop of intestine cut off from the rest of the bowel was shown to contain after a certain time 60 grams (2 oz.) of faecal matter, and Praussnitz has shown that a large proportion of the faeces is not derived from food residue.

Undoubtedly mastication receives too little consideration, and the important part played by defective teeth in the causation of digestive troubles is hardly appreciated even by the profession and still less by the public, but Mr. Fletcher goes too far. One of Mr. Fletcher's principal disciples in this country is Mr. Hubert Higgins of Cambridge, who has modified his own personal habits in accordance with the system and claims to have benefited greatly in health thereby. In a letter written by him to Mr. Fletcher, he says: "The great advantage of finely dividing the food in the mouth so as to present as large a surface as possible for the action of the intestinal juices is obvious when one reflects on the rapidity with which bacteria can and do act on pieces having a smaller area in consequence of their larger bulk" (whatever this may mean); and he adds, "When one reflects that Dr. Mott attributes the main cause of insanity to the absorption by the body of the cleavage products produced by microbes in the intestines, and the increasing recognition of such poisons in the causation of chronic disease and disturbance of health, this factor alone would afford an explanation of some of the phenomena induced by the practice of economical nutrition." The argument is a little difficult to follow, for if by finely dividing the food we favour bacterial action in the intestine, it would seem doubtful whether we should not thereby induce a greater formation of these poisons, for, as the experience with Cetti showed, even complete absence of food, far from hindering, apparently favours their formation in quantities even larger than normal.

With respect to the low proteid content of Mr. Fletcher's diet we shall have to say something later, but it cannot be admitted that mastication, however perfect, can increase the value of the meat albumen; and while we may grant that 60 grams of proteid have proved sufficient for Mr. Fletcher, and may be enough for other persons of his age and manner of living, it has yet to be proved how far the rate may be more widely applicable. As we shall see, there are good reasons for believing that 80 grams are more generally required.

(To be continued.)

UNDER the will of the late Miss Elizabeth Gough of Ashton, Somerset, the following Bristol institutions each receive a sum of £500: The Royal Infirmary, the General Hospital, and the Hospital for Sick Children and Women. Similar sums are bequeathed also to the West End Hospital for Diseases of the Nervous System, London, and the Royal Hospital for Incurables. To the Bristol Dispensary is left a sum of £200.

THE ANNUAL REPORT OF THE MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD.

A PRELIMINARY notice of the annual report for 1908-9 of the Medical Officer to the Local Government Board in England and Wales appeared in the BRITISH MEDICAL JOURNAL of January 22nd.

The matters of greatest general medical interest are, as usual, the auxiliary scientific investigations, but there are some points in the report of the Board's medical officers which are of importance to the profession.

Cholera.

Dr. Theodore Thompson's sanitary survey of the coast was undertaken in view of the prevalence of cholera in Russia. It is satisfactory to note that the seaports with the greatest traffic are, as a rule, classed as "good." Dover, Harwich, Newhaven, Portsmouth, Southampton, and Weymouth are only "fair," whilst Holyhead is "bad."

Reports of Medical Inspections.

Abstracts of reports on various localities made by the medical inspectors of the Board seem to afford evidence that the system of part-time medical officers is not viewed with favour, and the Board is prepared to take a strong line with regard to insufficient remuneration and to oppose ill-judged attempts of sanitary authorities to economize at the expense of efficiency. The report on a much advertised health resort is summarized as follows:

Diphtheria prevalence associated with school attendance; little advantage taken of bacteriological methods, both in diagnosis and in ascertaining whether cases have ceased to be infectious. Artisans' dwellings with defective drains and unpaved backyards. Considerable number of underground bakehouses. Some cowsheds dark, dirty, ill-ventilated and overcrowded; cows generally in a filthy state. Certain members of council openly advocate deviation from by-laws; majority of the Sanitary Committee engaged in the building and allied trades. . . . Vaccination of small-pox contacts not urged . . . annual reports not adequate and not available for the general public.

Enteric Fever due to an Infected Swimming Bath.

An epidemic in the Royal Marine Dépôt at Walmer was investigated by Dr. R. J. Reece. The cases were confined to the recruits, whilst the older men, who were under almost the same conditions, escaped. Water supply, infection from cases outside the barracks or from carriers, could apparently be excluded. The swimming bath was supplied from the sea, and the sea was contaminated by sewage at this point. The bath was abandoned and the epidemic ceased.

Cambridge Water Supply.

Dr. Theodore Thompson and Mr. P. M. Crossthwaite report adversely on this supply, which, as regards the part of it which is derived from the Lower Chalk, is considered to be dangerous to the lives and health of the large and important community to whom it is supplied.

The Hygiene of the Navvy.

Dr. Reginald Farrar has investigated the problem of housing a large temporary population. In the vicinity of all large temporary works there have been numerous complaints of sleeping out. The inspector points out that this is in part due to the contractors evading their moral responsibilities as to the provision of proper lodgings; but, as the same evils have occurred where there was proper accommodation, this is not the sole cause. The fact seems to be that, besides the respectable navvy, there are attracted to these places large numbers of bad characters who "lodge with Mrs. Greenfields"—that is, sleep out—in order to have more money for drink. They are encouraged by the practice of "subbing"—paying at the end of the day. Subbing is necessary in the case of good workmen for the first two weeks, but not later. Some recommendations for the more effectual prevention of these evils are made.

Food Inspection.

Regulations were issued in the autumn of 1908 for the inspection of imported meat, and it is satisfactory to learn that they are working smoothly and have resulted in the rejection of much unsound and diseased meat.

It has been satisfactorily demonstrated by Dr. MacFadden that boron preparations and other preservatives are only required when unsound meat is to be packed, and that this fact is now admitted by most manufacturers. The metallic contamination of tinned meat has been shown by Drs. Buchanan and Schryver to be due to the use of inferior qualities of tinplate and unsatisfactory methods of soldering.

Water Supplies Acting on Lead.

In an introductury note to a series of forty-eight short reports on this subject, the medical officer adopts the position that it is the duty of the water undertakings to supply a water free from plumbo-solvent properties, and that it is impracticable to forbid the use of lead piping. He also suggests that a good deal of chronic ill-health may be due to plumbism which is not severe enough to furnish definite diagnostic signs. "The question as to whether lead poisoning due to domestic water should not be made a notifiable disease will deserve attention." Private supplies have given rise to a fair number of cases. He strongly recommends the systematic examination of water supplies, private as well as public. The appended reports show that the subject still requires attention.

Vaccination Returns.

Excluding those children who died before vaccination, 77.5 per cent. were successfully vaccinated; 0.2 per cent. were either insusceptible or had had small-pox; 1.8 per cent. were postponed under medical certificate, and 9.1 per cent. were unvaccinated owing to conscientious objections, leaving 11.3 per cent. who are still unaccounted for. Leicester heads the record with 67 per cent. of all births remaining unvaccinated. Carmarthen has only 4 per cent.

Typhoid "Carrier" Cases.

Drs. Theodore Thomson and J. C. G. Ledingham are following a series of typhoid cases after recovery in order to ascertain the conditions under which bacilli are excreted. They have not yet obtained sufficient data for a report on the subject. Nine outbreaks, with features suggesting that they might be due to carriers, were investigated, and in two the outbreak was traced to a carrier. Treatment with sour milk and vaccines, both stock vaccines and homologous vaccines, has proved useless.

Hernia.

Hernia being an important cause of pauperism, Dr. J. Basil Cook has made it the subject of a careful statistical study. Its prevalence is very difficult to gauge, as even the recruiting statistics are quite unreliable. A candidate is rejected without any further examination when any serious defect is found, hence statistics vary according to the order in which the examiner proceeds. The proportion of hernia in a general population is greatest in infancy, very low during childhood, increases with age during the most active period of life, and falls again after the age of 65. In regard to heredity, it was found that less than 1 per cent. of the unruptured had more than one relative ruptured, whilst more than 16 per cent. of the ruptured gave this history. Figures show the preponderance of right inguinal hernia over left. Analysis of the occupational incidence of inguinal hernia brings out some interesting facts, the preponderance of hernia on the right side being much less in railway porters, carpenters, and hammermen. Dr. Cook can propose no explanation in the case of porters, but in the case of carpenters he suggests that the attitude with the left knee bent during sawing may relax the tissues around the left ring, whilst in the case of hammermen the advanced position of the left foot in striking may act in a similar manner. It having been suggested that the excess of right femoral hernia is due to a larger capacity of that side of the pelvis, careful cyrtometric measurements were made of the pelvis in children and adults. The circumference appeared to be equal on each side in the great majority of cases, but when unequal it was more common to find the right side larger than the left. Hospital statistics showed that there had been a great increase in the number of patients who underwent the radical cure. The death-rate in the kingdom has remained practically stationary, the decrease in the number of deaths from strangulated hernia having apparently been neutralized by the small percentage of fatalities following the radical cure. In the army and the navy there has been an increase in the number of operations and a corresponding decrease in the number who were invalided the service on account of hernia.

The influence of occupation is very difficult to gauge. The statistics of the Truss Society show a great number of gas-workers, but this is merely an indication of the fact that the gas companies are liberal subscribers. An ingenious handling of the figures obtained from the Truss Society shows that the labourers have relatively a larger proportion during the early years of life, whilst clerks show a greater proportion in later life. This may merely indicate that ruptured men become clerks owing to the non-strenuous nature of the work.

Differentiation of the Streptococci.

Dr. Savage has continued his researches on this subject. Streptococci of bovine origin set up mastitis in goats. Streptococci of human origin usually fail to do so, and in those cases in which inflammation ensues it is always much less severe than when due to bovine streptococci. It is interesting to note that, although considerable cultural differences were met with, there was no relationship between cultural type and ability to set up mastitis in the goat. Being convinced that the streptococcus of bovine mastitis is not virulent for man Dr. Savage on two occasions inoculated his own throat with a streptococcus isolated from a recent case of bovine mastitis. On each occasion the result was negative; subsequent examination of the flora of the throat showed that the coccus rapidly diminished in numbers, whilst, instead of producing acute mastitis in the goat, it caused a chronic mastitis associated with slow diminution of the milk, which was of normal appearance although it contained large numbers of cocci. Dr. Savage remarks that these experiments do not prove that the coccus in question was absolutely innocuous to man.

The Presence of Paratyphoid Bacilli in Man.

Dr. Savage is responsible for this report, which is full of useful information on the subject. The question of the relative frequency of paratyphoid in man is very difficult to answer. The complete proof of the diagnosis of paratyphoid is dependent on the isolation from the blood and discharges of the patient of the bacillus, which, when isolated, must be agglutinated by his serum, and at higher dilutions than the typhoid bacillus. A diagnosis from the serum reaction alone can be relied on only when the reactions to both typhoid and paratyphoid bacilli are determined to their ultimate limits. The fact that the serum of a case of enteric fever agglutinates paratyphoid bacilli is quite useless. It does not even indicate a mixed infection, as the serum of a rabbit immunized with pure culture of typhoid bacillus may also agglutinate both types. The serum from 200 cases of suspected typhoid fever was examined. Only 171 of these cases were afterwards found to be clinically typhoid, and of these 5, or possibly 6, gave the reaction for paratyphoid when tested according to this rule. Clinically these cases were like typhoid. Thus, about 3 per cent. of ordinary "typhoid" cases are probably paratyphoid. The paratyphus bacillus could not be isolated from healthy faeces, or from cases of diarrhoea, but only from paratyphoid cases. The relationship between the paratyphus bacillus and other members of the Gaertner group was investigated. Agglutination reactions are the only means by which this can be done. The *B. enteritidis* is easily separated from the others, including the paratyphus bacillus, the bacillus of swine fever, and of various meat-poisoning cases. Whilst the meat-poisoning bacilli agglutinated well with paratyphoid serum, the paratyphoid bacilli were agglutinated by meat-poisoning serums only at low dilutions, hence Dr. Savage concludes that they are not quite identical.

B. suipestifera is apparently identical with the bacillus of meat poisoning. In regard to epidemiology, Dr. Savage emphasizes the fact that the similar clinical courses of typhoid and paratyphoid fevers do not entitle us to assume that their epidemiological features are similar. One case of paratyphoid fever cannot be traced to a former case, and the rarity of the disease is also an argument against this mode of dissemination. One view is that the disease is due to sudden augmentation of the virulence of paratyphoid organisms originally present in the body as saprophytes, but there is no positive evidence for this hypothesis. Another view is that animal infection may play a part. This is supported by the fact that whilst *B. typhus* is never met with as a parasite of the lower animals the members of the Gaertner group as a whole play an important part in animal pathology, but there is no definite evidence for this theory. The German cases described as being due to *B. paratyphus* are not admissible, as German pathologists claim that the bacilli of meat poisoning (Aertrycke group) are identical with the paratyphoid bacillus. During an epidemic of swine fever at Colchester a careful watch was kept for cases of paratyphoid, but none were found.

Prevalence and Sources of Tubercle Bacilli in Cow's Milk.

This is a valuable summary by Professor Delépine of his work on this subject from 1892 to 1908. The descriptions of methods and technique will be very useful to all bacteriologists, but only points of general interest will here be mentioned. The pathology of the udder of the cow is described and illustrated. The possible sources of tubercle bacilli in the milk are discharges from the respiratory passages, from the urine, from the alvine discharge, from utero-vaginal discharge, and from a tuberculous udder. All but the last are easily avoidable, as is contamination from a phthisical milkman. Fourteen years' work has confirmed his original view that the chief source of tubercle bacilli in the milk is the tuberculous udder. In all tuberculous cows which had not given tuberculous milk it was found that the udder was free from tubercle, Thus the problem is to diagnose tuberculosis of the udder. This cannot be done by purely clinical means. When, however, a skilled veterinary surgeon picks out any suspicious case, and forwards the milk to the laboratory, the results are very satisfactory. At Manchester the ordinary routine is as follows: Samples of milk are collected at the railway stations and examined by microscopical and inoculation methods. If a positive result is obtained, the veterinary surgeon visits the farm and forwards samples of the milk from any suspected animal. The tuberculous animals are then eliminated, and a second railway sample taken to check the result. In some cases the samples collected at the farm were not tuberculous, and a second railway sample was also negative. Explanations of this apparent contradiction were found in many cases. The farmer who hears that a sample of his milk has been taken, examines his herd and sells any suspicious cow, or he may be constantly buying and selling. These causes explained 40 out of 60 cases. In other cases the farmer had been selling milk from another farm. In others, again, a cow with a tuberculous udder was found at a subsequent visit. Investigation into these details showed that in 78 6 per cent. the source of the bacilli was traced to the udder, whilst in a further 16 per cent. the same source was at least probable. When the milk of certain farms remained persistently tuberculous in spite of the weeding out of cases of tuberculous mastitis the failure was usually due to the farmer keeping old cows or frequently changing his stock. The great disadvantage of the bacteriological method of diagnosis is that it is very slow, but in many instances it can be accelerated. Thus it is generally possible by the microscopical method alone to demonstrate the presence of bacilli in the milk from a single tuberculous cow. These results must be checked by injection experiments, as a negative result is of little value when obtained by the microscopical method alone. This method of supervision is very expensive, but it has resulted in a diminution of tuberculous samples from 16 1 per cent in 1897–1898 to 6 5 per cent. in 1907. There has also been a concomitant decrease in the macroscopic dirt found in the samples.

Pneumonia in Young Children.

A report by Dr. Foulerton on this subject is based on the statistics of the Registrar-General and from some London hospitals. Whilst hospital *post-mortem* statistics show that the vast majority of the "respiratory" deaths are due to pneumonia, the general statistics state that 40 per cent. are due to pneumonia and 51 per cent. to bronchitis. This leads to the conclusion that the "bronchitis" deaths are really unrecognized pneumonia and therefore not to be differentiated. It is also impossible to differentiate, in statistics, between lobar and broncho-pneumonia. A series of hospital cases were then classified into five groups.

I. Directly connected with *antenatal causes* (syphilis, cleft palate, and congenital heart disease). These causes were found to have a distinct influence during the first year of life, and their mode of action is easily understood.

II. *Marasmus* and long-standing diarrhoea, which had distinct influence in the first year of life, and to a slighter extent in the second year.

III. *Rickets*, which is seen to be a factor in the first year, much more so in the second year, and to a less extent in the third. In a series of necropsies of children under 3 years of age it was found that of the pneumonia cases 44 86 per cent. had rickets, but of cases dying from other diseases only 24.73 per cent. Dr. Foulerton concludes that rickets is not a special predisposing factor in itself, but that both rickets and pneumonia are results of lowered resistance due to artificial feeding.

IV. The effects of previous zymotic disease (excluding cases in which the pneumonia was a direct sequela of the zymotic). Pneumonia after convalescence from measles and whooping-cough was almost the only form which figured in the statistics. The mortality from this cause is greatest in and after the second year of life.

V. Where no evidence of any cause could be obtained. This group contained 52.5 per cent. of all the cases.

The report concludes that no special measures are practicable beyond such as are at present operative or contemplated to promote the natural feeding of children, to check the spread of epidemic disease amongst young children, and to provide for the satisfactory housing of the working classes.

Streptococcus Pyogenes.

Dr. Sidney Martin has succeeded in growing this organism on a special alkali-albumin medium, and has obtained some toxins which killed rabbits in a few hours. Boiling destroyed their potency to a great extent. The results were rather inconstant.

Storage of Glycerinated Calf Lymph.

Statistics are given to show that vaccine lymph can be stored at temperatures below freezing point without losing potency. Samples of lymph were sent for a tropical voyage. The lymph stored in tubes inside a tin box which was kept cool preserved its power, whilst some dried "points" were almost useless.

THE third International Congress of Physiotherapy will be held in Paris this year from March 29th to April 2nd, under the presidency of Professor Landouzy, Dean of the Faculty of Medicine. The work will be distributed among seven sections, which will deal respectively with treatment by the following physical agents: (1) Movements (massage, gymnastics, sports, etc.) and rest; (2) water, air, heat, and cold; (3) climate, sun, and sea; (4) radiations, electricity; (5) luminous and dark, radium, etc.; (6) mineral waters; (7) diet, food, and systems of alimentation. The subjects proposed for discussion are: (1) The education of the respiratory function; (2) bloodless treatment of congenital luxation of the hip; (3) treatment of constipation; (4) the movement treatment in diseases of women. Among the communications promised are the effect of active and passive gymnastics on disorders of the circulatory system, by Dr. Hazebroeck, of Hamburg; modern physical education, by MM. P. Tissié, M. Faure, and J. Philippe; the treatment of organic affections of the nervous system, other than ataxia, by methodical exercises, by MM. Petren, M. Faure, and Mencière; treatment of deviations of the vertebral column, by MM. Redard and R. Mesnard, of Paris; treatment of neuralgia in its various forms, by MM. Weterwald, of Paris, and Petren. Communications relative to the congress should be addressed to the Secretary, Dr. Maurice Faure, 2, rue de la Bienfaisance, Paris.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

BATH SALTS FOR RHEUMATISM.

THE proprietary remedies for rheumatism and allied complaints which we have previously described have been mostly for internal administration. Recently certain "bath salts" have been largely advertised for the treatment of complaints of this kind by means of baths. We give here the results of analysis of some of the principal articles of this kind.

OZONIA.

This is supplied by the Ozonia Company, Dublin, in a packet, price 1s., containing about 13 oz. The package contained a descriptive leaflet, from which the following extracts are taken:

The introduction of Ozonia marks a new era in the treatment of Rheumatism, Gout, and allied complaints. This remarkable preparation is used in the bathing water, where it reaches the source of the trouble through the pores of the skin. The whole body is treated at once, and not the least trouble is entailed to the sufferer. The system is thoroughly cleansed—the poisonous uric acid is neutralized, and the patient is reinvigorated. The method is new, but it has hundreds of wonderful cures to its credit already—so try one packet, and judge by results. . . .

The Bath Cure. Bathe in it—that's all.

There are many complaints which are acknowledged to have one root cause. The cause of Rheumatism, Sciatica, Lumbago, and Gout is the presence of too much uric acid in the blood. The problem of how to remove this poison has hitherto proved unsolvable, but now Ozonia has been proved to be the proper means. The worst cases of uric acid troubles yield to the soothing medicated waters of Ozonia. . . .

"Ozone," the health-giving principle of Fresh Sea Breezes, is liberated in the "Ozonia" bath, and has a marvellous exhilarating effect on the patient; this, combined with the stimulating effect of the other constituents of the bath, induces a feeling of bodily well-being which is most gratifying.

How to use "Ozonia."

Dissolve one packet in an ordinary bath of hot water, and immerse the body in it, keeping the face and back of the neck sponged.

Remain in the bath at least 15 or 20 minutes, even longer if desired.

The best time for taking the Bath is before going to bed, but this is not imperative.

Number of Baths to be taken. In severe cases a bath every second night is advised, but when the acute symptoms have disappeared, a bath once or twice a week is sufficient; in most cases, a series of 12 baths will be found to effect a perfect cure.

If total immersion is not feasible, stuping with a hot solution (a tablespoonful of "Ozonia" to a gallon of water) is very beneficial, but complete immersion gives best results.

Analysis showed the composition of the salt to be:

Sodium carbonate, reckoned as anhydrous	77.00 per cent.
Water	22.30 ,,
Chloride, reckoned as sodium chloride	0.46 ,,
Potassium salt...	a trace

In view of the statement, quoted above, that ozone is liberated in the bath, special search was made for any ingredient, such as percarbonate, perborate, or peroxide, which could yield oxygen, but no trace was found of any such substance. Commercial sodium carbonate commonly contains a little chloride, such as the quantity found.

ANTURIC BATH SALTS.

This preparation is supplied by "Anturic Salts," Limited, of London. A tin, price 1s. 6d., contained about 4½ oz. It is described on the package as:

For Gout, Rheumatism, Sciatica.

Directions. Dissolve the contents of one tin in a bath full of hot water. Take two baths weekly for six weeks. The water should be as hot as can be comfortably borne. In severe cases the contents of two tins may be used for one bath.

If it is inconvenient to use a full bath, or for local affections fomentations may be used; for this purpose dissolve a tablespoonful of the Anturic Salts in a gallon of hot water, and bathe the part affected.

After the cure an occasional bath is desirable.

Analysis showed the salt to consist of:

Sodium carbonate, reckoned as anhydrous	96.86 per cent.
Water	2.70 ,,
Chloride	trace
Potassium salt	,,
Perfume	,,

RHEUMSOL BATH SALTS.

This is supplied by Clarence Chemical Works, Hounslow. A tin, price 1s., contained about 5 oz. It is described on the tin as:

Uric Acid Solvent. For Rheumatism, Gout, etc.

Directions for use. Add the contents of this tin to a full sized bath of hot water. For a smaller bath less in proportion. A bath should be taken every third night for a month.

Analysis showed the salt to consist of:

Sodium carbonate, reckoned as anhydrous	87.96 per cent.
Water...	11.18 ,,
Chloride	considerable trace
Potassium salt	trace

Exsiccated sodium carbonate (*B.P.*) is practically anhydrous, and is priced in a wholesale druggist's list at 7d. per lb. One pound of anhydrous sodium carbonate of commercial quality represents about 2¾ lb. of common washing soda crystals.

* Previous articles of this series were published in the following issues of the BRITISH MEDICAL JOURNAL: 1904, vol. ii, p. 1585; 1906, vol. ii, pp. 27, 1645; 1907, vol. i, p. 213; vol. ii, pp. 24, 160, 209, 393, 530, 1653; 1908, vol. i, pp. 833, 942, 1373; vol. ii, pp. 86, 505, 1022, 1110, 1193, 1285, 1566, 1697, 1875; 1909, vol. i, pp. 31, 909, 1128; vol. ii, p. 1419; 1910, vol. i, pp. 151, 213.

LITERARY NOTES.

DID Shakespeare, who seems to have known everything by intuition, foresee the suffragette? At any rate, he makes Cleopatra anticipate the "hunger strike." When she is taken prisoner she says to Proculeius:

> Sir, I will eat no meat, I'll not drink, sir;
> . . . this mortal house I'll ruin,
> Do Caesar what he can.

This is prophetic. But though one may admit that many suffragettes have more than the charm of her of whom it was written—

> Age cannot wither her nor custom stale
> Her infinite variety,

we cannot see in Mr. Herbert Gladstone much likeness to Caesar.

At a meeting of the Paris Académie de Médecine held on January 25th, Professor Blanchard presented the first fasciculus of a work, entitled, *Epigraphie Médicale Corpus Inscriptionum ad Medicinam Biologiam que Spectantium*, which he is bringing out. For several years past he has collected documents of all kinds appertaining to medicine. He asks all who are interested in the history of medicine to help him by sending copies of any curious or interesting inscription they may come across in the registers of churches, or on tombstones, whether in the humblest village, in great cathedrals, or local museums. Manuscripts preserved in the archives of cities and departments, and in public libraries, will often supply precious material of the kind indicated. The names of all contributors will be published in the *Epigraphie*. M. Blanchard does not propose for the present to include inscriptions concerning persons who have lived or events which have happened later than December 31st, 1900. He will be glad to accept "finds" not only from doctors, but from historians, libraries, learned societies, and antiquarians. The work will appear in parts at irregular intervals. The first fasciculus contains 262 inscriptions with 4 figures in the text.

At the same meeting of the Academy Professor Albert Robin presented on behalf of Dr. Coromilas, Professor in the Faculty of Medicine of the University of Athens, a pamphlet containing two lectures delivered before the Society of Friends of the People, bearing the title, *Acquired Diseases Traced through the Development of Mankind*. The "acquired diseases" are tuberculosis and cancer, of which the author has made a pathological study extending back to the fourth century before Christ and coming down to the present day.

Dr. Pergens states in the January number of *Janus* that Dr. Meyerhof, an ophthalmologist practising at Cairo, has discovered interesting manuscripts relating to Arabian ophthalmology. Among them is *The Book on the Structure of the Eye*, by Honein *The Book on Vision*

and Perception, by Thabit ibn Qorra; two treatises of Mesuë, entitled respectively, *The Book on the Knowledge of the Eye and its Coverings*, and *The Book on the Change in the Eye;* a work on anatomy by an hitherto unknown writer, named Ali ibn Ibrahim ibn Bakhtischoua, probably a member of the celebrated family of that name. Dr. Meyerhof has also in his possession the treatise of Ammarel Mausili; another, with illustrations by Abi ibu Issa, and the thirteenth chapter of Galen's work on ophthalmology. Part of it has already been translated, and will shortly be published.

In the *Glasgow Herald* of January 31st, 1910, there is an extract from that journal of half a century before. The *Herald* of January 31st, 1860, announces the appointment of "Mr. Lister of Edinburgh" to the office of Professor of Surgery in the University of Glasgow, vacant by the death of Dr. Lawrie. While admitting, "so far as we have heard," that "Mr. Lister is a gentleman qualified in every respect for the important office to which he has been nominated," the *Herald* evidently thinks that a Glasgow surgeon should have been chosen. Apparently it was all the fault of an over-zealous advocate.

The claims of our local men have been ignored, we suspect, from the preposterous plan which Mr. Dalglish followed in his well-meant attempt to bring their merits before the Home Secretary. We cannot regret that our impulsive representative has been snubbed, although we may regret that the office has gone past the door of some able Glasgow practitioner. We never doubted that Mr. Dalglish honestly and disinterestedly desired to find the best man; but the plan he took was a singularly injudicious one; and he must now be satisfied that the Government patronage, especially when it concerns with university appointments, is not to be regulated according to the principles of universal suffrage.

Poor Mr. Dalglish. He meant well, but he was snubbed, and the Glasgow paper is evidently not sorry that such a misadventure should have befallen him. And assuredly we entirely agree that "universal suffrage," whatever advantages it may have politically, is not a satisfactory means of choosing a professor or estimating scientific merit. The writer goes on to say: "What Mr. Lister may achieve as a lecturer we have yet to learn." Well, we have no doubt that the *Glasgow Herald* has learnt by this time; certainly the world has learnt the name of Lister as marking not only the beginning of scientific surgery, but an era in the history of mankind.

In Bulletin No. 3 of the Archaeological Survey of Nubia, published by the Egyptian Government, Professor Elliot Smith gives a summary of the results of Dr. Douglas Derry's examination of human remains brought to light in the course of excavations in Lower Nubia between October, 1908, and the end of that year. They show that the predynastic population of Nubia was indistinguishable in physical characteristics from the predynastic population of Egypt. Professor Elliot Smith insists on the fact that the examination of accurately dated anthropological material lends no support to the view, often put forward in recent years, that the "archaic" Egyptian had a strong negro element in his constitution. Neither in Egypt nor in Nubia, before the time of the third dynasty, was evidence of negro influence found, except in rare sporadic cases. That a people living for long years on the fringe of the negro territory could remain wholly free from admixture is, he says, altogether inconceivable. In a cemetery at Gerf Husein dated by Dr. Reisner as late predynastic and early dynastic, they found four negro skeletons, all female. Professor Elliot Smith proceeds:

The occurrence of such individuals in a graveyard, all the male occupants of which are unmistakably Egyptian, may be an indication of the manner in which the mixing of Egyptian and negro began. The Egyptians occasionally took unto themselves negresses as wives, and perhaps the definite negroid tincture of the Nubian population, which became manifest by the time of the third dynasty, may have been produced in this way. What I want to make perfectly clear is that such contamination of the Egyptian type is exceedingly rare before the time of the third dynasty, and that it is an utterly misleading misrepresentation to so magnify these sporadic and insignificant evidences of a tincture of black blood as to speak of the archaic Egyptian people as a mixed race, of which the negro constitutes one of the elements.

An important transformation of the population of Lower Nubia began about the end of the third dynasty and has continued ever since. The change in the physical characteristics of the people was produced by a large influx of negroes from the south, who intermarried with the Egyptians left behind in Nubia. The cause of this sudden immigration can only be conjectured. Dr. Elliot Smith says:

Perhaps it is something more than a mere coincidence that it happened at the very moment when the seat of government was being transferred from Upper to Lower Egypt, and perhaps the hold of Egypt on Nubia was relaxed as a result of the concentration of Egypt's power on her relatively small population near the Delta, the more abundant and fertile land of which may have been the attraction.

Dr. Derry's investigations, he adds, seem to point to the possibility that the Middle Nubians (twelfth dynasty) are merely the result of the more intimate blending and assimilation the one to the other of the heterogeneous Egyptian and negro elements of which the archaic Nubian population consisted. The process of mixing began, as has been said, at the time of the third dynasty, and became more and more intimate during the time of the succeeding eight Egyptian dynasties, until the new hybrid population assumed the remarkably homogeneous blend of Egyptian and negro traits which characterize the Middle Nubian people. No doubt during the whole of that period, extending roughly over ten centuries, the two racial elements were reinforced, from time to time, by the immigration into Nubia of fresh Egyptian elements from the north, and Sudanese from the south; but the large mass of evidence available seems to indicate that the predominant factor moulding the physical characteristics of the people in Nubia during this period was the more or less undisturbed blending and assimilating of the two series of racial characters the one to the other. The view that the Middle Nubians are the product of such a fusion of the heterogeneous elements of the archaic Nubian population is strengthened by the fact that there is no evidence of the irruption of any new ethnic factor into this region. The Middle Nubian population conforms to a physical type which seems to have remained dominant in Nubia ever since then, for the span of almost 4,000 years separates the Middle Empire from the present. In the Ptolemaic and Roman periods the bulk of the population was still Nubian, but from time to time series of Egyptian and negro bodies are found in the cemeteries. It is interesting to note that in one of the Middle Nubian cemeteries Dr. Derry found the skeleton of a woman about 21 years of age showing marked signs of tuberculous disease of the spine. The discovery of two other cases of tuberculous disease has shown that tuberculosis in Nubia is at least a thousand years older than was before known. Dr. Derry also found in a pre-Christian Nubian tomb a case of what was probably malignant disease. This specimen is of particular interest, as Dr. Elliot Smith says that no definite evidence of malignant disease has yet been found in any ancient Egyptian or Nubian body.

ADAMS v. POMEROY.

THE fund raised to reimburse Dr. Martha Adams's legal expenses, incurred as the result of the action Adams *v.* Pomeroy, is now closed.

Dr. Adams's out-of-pocket expenses not covered by the taxed costs amounted to a sum of about £100. It was felt that this charge should not be allowed to fall on the plaintiff, and with the cordial co-operation of the BRITISH MEDICAL JOURNAL and the *Lancet* an appeal was made to the profession.

There was a generous response from individual members of the profession, and this has been supplemented by a grant from the *Lancet* Relief Fund, which now completes the required sum.

On behalf of those responsible for the inauguration of this appeal, the Honorary Secretary wishes to express recognition of the sympathy and help which have been shown in the matter.

Dr. L. Garrett Anderson gratefully acknowledges the following contributions which she has received since the publication of the last list of donations:

	£	s.	d.
Lancet Relief Fund	20	0	0
Miss F. Davenport-Hill	1	0	0
J. M. C.	1	0	0
Sir Richard Douglas Powell	3	3	0
Dr. Owen Berkeley Hill	2	2	0
Already acknowledged	78	19	6
	£106	4	6

Nova et Vetera.

WAS DANTE A DOCTOR?

(Continued from page 333.)

Medicine in Dante's Writings.

We approach now the third line of investigation from which some hint may be gained as to Dante's relation to the practice of medicine—it is the internal evidence of special knowledge of medical matters which the poet's own works exhibit.

Plumptre (op. cit., p. 87) has no doubts regarding this evidence and the conclusions to be drawn from it. He writes:

> Of both studies and practice (in medicine) his works supply sufficient traces. His library contained Hippocrates and Galen and Dioscorides, probably also translations of the medical treatises of Avicenna and Averrhoes (*H.*, iv, 139–143), possibly the writings of Jewish physicians, and those of the great medical school of Salerno. He became acquainted with the foulness of Italian hospitals (*H.*, xxix, 46), with the symptoms of leprosy (*H.*, xxix, 73–84), dropsy (*H.*, xxx, 52–57), fever (*H.*, xxx, 107), famine (*Purg.*, xxiii, 49); looked with compassion on what is perhaps the most piteous of all sights, the frenzied delirium of a child (*Par.*, i. 102). He studied his Aristotle on the mysteries of embryology (*Purg.*, xxv, 37–72), and with them faced the question of the origin of the human soul, the theories of creation or transmission (*Purg.*, xvi, 35–90). He learnt to pay special honour to the "beloved physician" who wrote the Acts of the Apostles (*Purg.*, xxix, 137).

Plumptre then continues his argument, showing that in the knowledge of spices, jewels, pigments, and surgical and optical instruments, all of them articles included in the apothecary's business in the thirteenth century, Dante spoke with "the language of an expert." But, further, he proceeds to find in the weakening of the Florentine poet's belief in religion about the year 1300 supplementary evidence of his familiarity with medicine. He writes (op. cit., p. 91):

> I do not know how far back the proverb of the later renaissance, *Ubi tres medici, duo athei*, may be traced, but it was true in the thirteenth as in later centuries that while, on the one hand, the study of natural science tended to emancipate men's minds from popular superstitions, it not seldom drifted into materialism, scepticism, pantheism; and Dante was drifting with the current.

When, however, these statements, which both singly and as a whole are very striking, are looked at more closely, the evidence to be had from them becomes slightly less conclusive.

It is somewhat deceptive to speak of Dante's library containing such and such authors. Books in Dante's time were manuscripts only, and meant much money to purchase; and it is necessary to disabuse our minds of the idea of Dante sitting in his study surrounded by valuable manuscripts to which he could easily and constantly refer. No doubt he had access to books from which he was able to take notes, and this means of acquiring knowledge must have been greatly extended by his wanderings after his exile from Florence. Moreover, he had a mind which was like a photographic camera in the way it received and retained information of all kinds; so that whilst we may not speak of Dante's library in the sense of his collection of books, we may certainly speak of it with the meaning of the vast storehouse of book knowledge which lay within his brain. Encyclopaedic his mind was in every sense, and to the full extent of the significance of that word.

Had Dante, then, read Hippocrates's works? This raises the question, Could Dante read Greek? Dr. Edward Moore's opinion may be taken as decisive on this subject (*Studies in Dante*, First Series, p. 305, 1896). He holds that Dante did not possess any working knowledge of Greek, and was dependent upon Latin translations of Aristotle and other Greek writers for his information. At the same time mention may be made of the curious fact referred to by Moore (op. cit., p. 164) in a footnote, that there was an unedited MS. in the Laurentian Library at Florence, entitled *Teleutologia*, the author of which stated that he was a pupil of Dante, and had learnt Greek from him. But, putting this aside, the conclusion can scarcely be avoided that Dante had not gathered what he appears to have known about Hippocrates from reading the original works. But the Arabian physicians studied and translated Hippocrates, and through them his works were passed on to Western Europe and could be read in Latin versions made from the Arabic ones; thus, Gerhard of Cremona (1114–87) translated the writings of Hippocrates, of Galen, and of many of the Arabian physicians; Burgundio of Pisa gave still better renderings of Hippocrates and Galen, and Thaddaeus of Florence (Dante's Taddeo of *Par.*, xii. 83), who died in 1303, was so great an authority on the Father of Medicine that he was named "Ippocratista." There could, therefore, have been no difficulty in obtaining a knowledge of the *Aphorisms* of Hippocrates and of many of his other works through these sources in Latin. Dante, however, refers very slightly to Hippocrates. In the *Convivio* (I, viii, 30), in speaking of usefulness in gifts, he instances the absurdity of a knight giving a shield to a doctor, and of a doctor presenting a copy of the *Aphorisms* of Hippocrates to a knight; in the *Paradiso* (xi, 4) the *Aphorisms* are named as a synonym of medicine; in the *Purgatorio* (xxxix, 136–8) Luke is termed one of the familiars of that highest Hippocrates whom Nature made for the creatures she holds most dear (that is, for mankind); and finally, Dante, in his imaginary pilgrimage through the underworld (*Inf.*, iv, 143) pictures Hippocrates in Limbo among the blameless and illustrious heathen. In all these passages there is no reference to any medical matter; they simply relate to aspects of Hippocrates's life and works with which any layman might be well acquainted.

Standing with Hippocrates in Limbo were Avicenna, Galen, and Averrhoes (*Inferno*, iv, 130–144). Aristotle, the master of them that know ("il Maestro di color che sanno"), is seated with the men of science round him; on one side are the moralists, Socrates and Plato, and the natural philosophers, Democritus, Anaxagoras, Diogenes of Apollonia, Thales, Empedocles, Zeno of Elia, and Dioscorides; and on the other side are, again, the moralists, Orpheus, Linus, Cicero, and Seneca, and the naturalists, Euclid, Ptolemy, and the four physicians to whom reference has already been made. If one pictures the scene in one's mind, it will be noticed, as the Hon. Warren Vernon has pointed out (*Readings on the Inferno*, i, p. 143), that

> The last person of the first group—the botanist and physician, Dioscorides—is, as it were, side by side with the last person of the second group, the four physicians; so that the two groups are linked together, and compose a circle, of which Aristotle is the soul and origin.

This is one of these minor details in which Dante delights to be exact, and it is strikingly suggestive to the student who looks deeply enough. Now, all these six scientists (Aristotle, Dioscorides, Hippocrates, Avicenna, Galen, and Averrhoes), who dealt in their writings with medicine, are, with the exception of Dioscorides, quoted by Dante in one or other of his works. The references to Hippocrates we have noted; Aristotle is frequently quoted, and it is to be observed that in the *Purgatorio* his embryological treatise, *De Generatione Animalium*, is largely drawn upon; Galen's work (*Methodus Medendi*) is mentioned in the *Convivio* (I, viii, 33) and a saying of his is reported in *De Monarchia* (I, xiii, 45–47); and Avicenna and Averrhoes, the commentators, come under contribution, although not in connexion with medical matters, but rather with such questions as the nature of the soul and the composition of the Milky Way.

It is evident, therefore, that whilst there is abundant proof from his works that Dante was acquainted with some of the standard medical writings of his age, there are very few signs that he paid special attention to the purely medical portions of them as judged by the presence of quotations from them. Of course it may be, and must be, pointed out that the subjects with which Dante was dealing were not such as to give opportunity for medical references or quotations, and did not touch, save in the most incidental way, upon diseases and their treatment. This brings us to the last kind of evidence which is forthcoming regarding Dante's knowledge of medicine—namely, the references which his works contain to purely medical matters.

If we count a knowledge of embryology medical, and I think we may, then the passages in the *Convivio* (IV, xxi) and in the *Purgatorio* (xxv, 32–75), in which Dante

describes generation and formation of the body, are almost conclusive proof that the poet had more than a superficial acquaintance with medicine. Vernon quotes from Varchi (*Lez. sul Dante*, 1841, Lez. 1) the following strong statement on this point:

> This canto is sufficient to prove Dante to have been a physician, philosopher, and theologian of the highest order. It certainly proves him to have been a close student of Aristotle's *De Generatione Animalium* (for his embryology) and of Thomas Aquinas's *Summa Theologiae* (for his views on the origin of the soul), as must be evident to any one will trouble to look at the parallel passages which have been selected by Dr. Butler (*Purgatory*, p. 319).

So technical are these parts of Dante's writings that some of the commentators have spoken of them as an ostentatious display of a wide encyclopaedic knowledge; but it is possible that the matters dealt with in them appealed in a special way to Dante, and for reasons which are less evident in the twentieth century than in the fourteenth (vide Carroll's *Prisoners of Hope*, p. 342). At any rate, they deserve a more minute study than they have yet received, and I hope at another time to return to the consideration of Dante's indebtedness to the *De Generatione Animalium* of Aristotle. In the meantime it is sufficient to say that the passages referred to prove the poet's intimate knowledge of the most accurate information of his time respecting embryology, a conclusion which is further strengthened by a study of some other passages in the *Convivio* (IV, c. xxiii, xxiv), where the four ages of life are described and the statement made that the ten years after seventy are intended to balance the eight prenatal months of fetal existence.

Even in such a non-medical work as the beautiful and almost ethereal love story known as the *Vita Nuova*, Dante brings in some of the current physiology of the time, more of it, one is inclined to think, than any save a love-sick medical student would think of introducing. He sees Beatrice; at the sight the vital spirit (the heart or the emotional life) begins to beat (horribly apparent) in the least of his pulses; then the animal spirit (the brain or the perceptive life) begins to wonder; and then the natural spirit (the liver or organic and digestive life) begins to be disturbed (*Vita Nuova*, Section II). On this quaint description of falling in love Sir Theodore Martin quotes Karl Förster's note (*Das neue Leben*, 1841, p. 109) as follows:

> The philosophy of that period assumed, according to the precedent of Aristotle, the faculties of the soul to be threefold, and also three kinds of powers as lying at the bases of these, a natural or vegetative faculty (*potentia vegetativa*), a faculty of sensation (*potentia animalis*), and a faculty of life (*potentia vitalis*), each of which has its appointed seat and appropriate organs in the body. In connexion with this stands the doctrine, which has passed from the Greek physicians and Arabian philosophers into the psychology of the time, of the Spirits—delicate filmy beings—to each of which its appointed seat in the body is assigned, in order therefrom to set into motion and activity the faculty which appertains to it. Of these spirits there are three sorts: (1) The natural spirit (*spiritus naturalis*), which has its seat in the liver, and shows itself more especially active in the organs of digestion and evacuation; (2) the animal or sensitive spirit (*spiritus animalis*), born in the heart, but to which the brain has been assigned as its abiding place, from which it radiates, like light, through the nerves, and by exciting them stimulates the faculties of sense and motion; (3) the spirit of life (*spiritus vitalis*), begotten from the purest heart's blood, which conveys the glow of life through the other members, and gives them all the capabilities of action, which emanate from vital heat. The arteries serve to transmit this spirit to all the members.

Dante, then, may have got his ideas of the "spirits" from some Latin translation of Aristotle, or, as Förster suggests, indirectly from Hugo of St. Victor's work *De Anima*.

Passing now to the allusions to disease in Dante's writings, we find, for instance, that the twenty-ninth canto of the *Inferno* contains a series of medical or semi-medical details. Virgil and Dante are passing through the tenth Bolgia of the eighth Circle, and the latter compares it to a hospital ward into which are gathered together all the malarial and other maladies of some of the most unhealthy parts of Italy in the hottest months of the year; gangrene, with its horrible odour, and some leprous skin diseases with their intolerable itching, are graphically, very graphically, described; and the poets pass between the sufferers like visitors going from bed to bed, or like physicians passing round their wards. In the succeeding canto (the thirtieth) of the *Inferno* there are clinical pictures of dropsy and fever which could hardly have been written by one who had not looked at these diseases with the trained eye of a physician. Take, for instance, the following description of a dropsical man, as rendered by Warren Vernon:

> I saw one shaped in fashion of a lute, if only he had had his groin cut short at that part which man has forked. The heavy dropsy, which so disproportions the limbs with the moisture which perverts all food, that the face no longer corresponds to the belly, forced him to keep his lips wide open, as does the hectic patient, who from thirst curls one (lip) towards his chin, and the other one upwards.

The technical realism here shown in the comparison instituted between the body deformed by dropsy, and the lute with its expanded lower part and narrow upper part, and in the description of thirst or perhaps of dyspnoea, is perfect; indeed, it is so complete that it may be doubted whether any poet who was not also a medical man could have written it. Some other passages in the *Divina Commedia*, for example, the description of famine in the *Purgatorio* (xxiii, 20–66) and of delirium in the *Paradiso* (i, 100–102) are not nearly so convincing. Taken as a whole, however, the evidence afforded by these passages is very strong, and one is not surprised that Dean Plumptre regarded it as conclusive proof that Dante had both studied and practised medicine.

CONCLUSIONS.

To sum up this long argument, it may fairly be concluded that Dante's attitude to medicine was not that of the mere *dilettante;* he had a far greater and more intimate and practical knowledge of the subject than can be supposed to have been acquired by reading and private study, even if we keep full in view the absolutely phenomenal nature of his mind. Doubtless he chose to enrol in one of the guilds in order to enter public life, but his choice of the Physicians and Apothecaries was not haphazard, but directed by several special considerations, among which it is fair to reckon a liking for medicine, and perhaps a sentimental feeling called into being by Beatrice's connexion with the Portinari Hospital. From a study of the rules and regulations of the guilds which came into force in Dante's time, it is not improbable that his enrolment entailed an examination which was not perfunctory and proof of the practice of his profession which was not merely formal.

If this conclusion be allowed, then it almost necessarily follows that Dante studied medicine at some university, most probably that of Bologna, although direct proof is absolutely wanting; he may not have passed through the whole curriculum, which at Bologna appears to have occupied four or five years, but yet have got sufficient knowledge to satisfy the consuls of the guild in Florence. The strongest proof that Dante had a real working acquaintance with medicine is supplied by the evidence contained in his works, none of which was medical in character, of a knowledge of medical authors, and of a power of describing and discussing medical matters which could hardly have been acquired by a layman, but might have been obtained by a genius such as Dante during a comparatively short period of application under favourable circumstances. If Dante were not a practising physician in the ordinary sense of the word, and if he never took the degree of Doctor in Medicine at Bologna or elsewhere, he yet had a knowledge of the subject which justifies us in describing him as a literary man of the highest rank, with a not inconsiderable practical and theoretical knowledge of medicine. He was not a medical man, but he was a man possessing some familiarity with medicine.

J. W. B.

ERRATUM.

IN part of the edition of the JOURNAL for last week an intrusive "not" found its way into the third sentence of the paragraph headed "Dante's Choice of a Guild," on page 332. The words should read, "For one of the upper classes."

THE will of the late Mrs. Caroline Amelia Savage of Tooting directs that the residue of her estate shall be paid to the Hospital for Women, Soho Square. The extent to which this institution is likely to benefit would appear to be about £10,000.

British Medical Journal.

SATURDAY, FEBRUARY 12TH, 1910.

PSEUDO-NEOPLASTIC INFLAMMATORY TUMOURS OF THE ABDOMEN.

IT has been the lot of not a few medical men to receive a visit from a robust and healthy person who had been condemned many months before, in thought, if not in so many words, to a certain death from abdominal cancer. The records of "homes for the dying" could furnish a good many such cases, in some of which, no doubt, exploratory operations had been performed. Of late years many contributions to the subject have been published,[1] among them an important paper in these columns by Mr. Mayo Robson,[2] and others have recently been reviewed by Le Dentu[3] in reporting an instance of the kind.

At the present time it cannot be said that there is any pathognomonic sign of cancer applicable to all cases. Not palpation, not inspection, not all the refinements of chemical analysis or of haematology, not even the microscope itself, except in the most careful and experienced hands, can claim infallibility. How many gastro-enterostomies, performed as a palliative measure, where the constitutional decline, the special symptoms, and the gross findings within the abdomen combined to corroborate a diagnosis of cancer, have proved curative in their outcome!

It is familiar knowledge that chronic inflammatory processes may give rise to massive hyperplasia of the connective tissues. Sir James Paget described a condition of "quiet necrosis" which was illustrated by the classic case of Morrant Baker's, in which amputation at the hip was performed for a large tumour of the femur thought to be a sarcoma. Again, all the granulomata furnish examples of inflammatory "tumours," and some of the deceptive abdominal conditions are undoubtedly due to such causes. An enormous mass, filling the whole lower abdomen, and apparently spreading from the left iliac fossa, was thought, when it broke down and a sinus appeared, to be due to actinomycosis. It was incised and a piece removed for microscopical examination. It was reported to be a small spindle-celled sarcoma, but in the fullness of time, under the influence of potassium iodide, the mass disappeared, and subsequent lesions, developed a year or two later, justified the assumption that the real origin was syphilis. That case exemplified, too, a remark of Le Dentu, that these inflammatory masses, size and fixity notwithstanding, are not characterized by obstruction, nor by persistent pain, nor necessarily by tenderness.

The granulomata, however, generally give some collateral evidence of their nature, whereas in the cases more particularly under notice it is wanting. Ulcers of the stomach or duodenum which reach the serous surface, perforating by a minute opening or not at all, sometimes give rise to massive induration by agglutination and induration of surrounding structures or by the development of hyperplastic connective tissue which may assume cartilage-like hardness and yet eventually undergo absorption. Chronic appendicitis, as Gangitano[4] has recently recalled, may induce a similar condition in the caecal region even in the absence of tuberculosis or actinomycosis. Less generally recognized is the important group met with throughout the course of the colon and most typically in the sigmoid loop. The causation is obscure. Sometimes no doubt ulcers form the starting point. In many instances there is a definite diverticle formation and the serous covering of these protrusions is the initial seat of a fibrosis comparable in its pathological history to that about the appendix. Le Dentu describes four forms: a discrete interstitial hypertrophic colitis often leading to stenosis; a simple limited adhesive pericolitis which does not, as a rule, lead to tumour formation; a diffuse pericolitis leading to an elongated tumour, the form and lie of which recalls that of the colon; and finally an "exuberant" pericolitis which agglomerates the omentum, coils of small intestine, subperitoneal connective tissue and even the prevertebral glands, and thus constitutes a voluminous aggregation in which the component parts are clinically indistinguishable. Mr. Mayo Robson is satisfied with a less elaborate classification, speaking of a chronic adhesive colitis with acute onset, and a chronic infiltrating colitis or proctitis of insidious onset and slow progress. The common sites are the flexures, but all parts of the large intestine may be affected.

In all such cases a suspicion of cancer is likely to arise, and the object of Le Dentu's paper seems to be to obviate the necessity for exploratory operation in this event. He has not, however, as yet advanced any sufficiently convincing criteria for diagnosis to support his position. It is not enough that time has proved him in the right in certain cases. The time that has been needed to clinch his argument may rob the patient of a clear chance of cure by excision, and the amelioration, produced by confinement to bed, dieting, and regulation of the bowels, upon which he insists as characteristic of the inflammatory cases, is not an unknown occurrence in true cancer cases. Of the importance of being conversant with the possibility of an inflammatory origin for neoplasms of the alimentary tract there cannot be two opinions, but any dictum which tends to minimize the enormous importance of exploratory laparotomy when undertaken after full investigation of all other sources of information, is to be deprecated. For one case of carcinoma of the gut operated upon in the early, excisable stage as a deliberate measure, the surgeon probably meets three or four in acute or subacute obstruction. The lesson to be learnt is not so much to hold the hand in the presence of doubtful tumours within the abdomen but to be guarded in pronouncing a bad prognosis after exploratory inspection, and to make the fullest use of the well-proven virtues of anastomosis and exclusion.

The inflammatory masses which develop about the diseased gall bladder and in the head of the pancreas, and the chronic epiploitis which is said to follow operations for hernia more especially—probably due, as Haim[5] has suggested, to infection of ligature silk by some attenuated virus—but which is also met with quite apart from operation, are other sources of error which could easily be multiplied.

The general bearings of the problem have been indicated, but there is one aspect upon which we wish to dwell with some insistence. A mistake in diagnosis

[1] Tissot: *Presse méd.*, 1908, No. 79.
[2] BRITISH MEDICAL JOURNAL, 1908, vol. i, p. 425.
[3] *Bull. de l'Acad. de Méd. de Paris*, 1909, vol. lxii, p. 289.
[4] *V. Langenbeck's Arch.*, Bd. lxxxix, Heft 2.
[5] *V. Langenbeck's Arch.*, Bd. xc, Heft 2.

which betrays the surgeon into the declaration of a hopeless prognosis does harm beyond the injury to his own reputation. In the words of Mr. Robson, "A single case of this kind may be the making of a fortune to the charlatan or the faith healer, or may serve to establish the reputation of a patent remedy." Of course, it may be of comparatively little moment that charlatans, faith healers, and patent medicine vendors should amass money; but only those who are daily witnesses of the tragedies traceable to delay occasioned by recourse to the futile means offered by such people can realize the harm done and the suffering caused.

It is such cases as these, moreover, that give plausibility to the various "cures" purporting to be founded on scientific principles and actual experience. But the end is not yet; and if there is something to be learnt by the medical man from the "faith healer" in the presence of a case that is quite without hope, it certainly behoves him to remember that there are conditions which simulate cancer with such faithfulness as to falsify all the bitter experience of other cases in which he has hoped, and striven against hope.

SANITARY SUPERSTITION.

WE are inclined to think that the greatest progress made by man within the last half-century lies in the discovery and application of means of defending himself against the multitudinous enemies which, "horsed on the sightless couriers of the air," threaten his life and health at every point where there may be a weak point in his armour. It would be otiose to recount the tale of our triumphs over pestilences against which our fathers were practically powerless. So complete has been the victory in certain directions that few among us have seen a case of typhus; small-pox, notwithstanding a recent epidemic, is unfamiliar to most practitioners in this country, while in Germany it is thought superfluous to describe it in textbooks; hospital gangrene is unknown to the present generation. The prevalence of consumption has been reduced by one half, and it has recently been estimated that by the adoption of proper measures it could, within a quarter of a century, be blotted out from the list of diseases to which man falls a prey.

In view of what has been accomplished, it is scarcely surprising that hygiene should, by zealous spirits, have been raised almost to the rank of a religion. This is, in itself, a good thing. But there are not wanting signs that already the cult of Hygeia shows a tendency to degenerate into superstition. Although Metchnikoff now suffers man, on certain conditions, to retain his colon, there are others whose teaching leads logically to the conclusion that, to be safe from microbes, we must, in the language of an old writer, "close and stop up all our vents," so that we can neither eat, nor drink, nor breathe, nor perform any other natural function except under a full aseptic ritual. But even this strict guard over the apertures of the body will not serve unless we keep our hands constantly holystoned, as it were, to preserve them free from infective germs. This, as we understand it, is the gospel preached by Dr. R. G. Eccles in the December number of the *Dietetic and Hygienic Gazette* of New York. In dirty hands he sees the source of woes to men more unnumbered than those which the wrath of Achilles brought on the Achaeans. "It can safely be asserted," he says, "that the chief unintentional crime of our age—if we can call that which is unconscious and unintentional a crime—is dirty hands. . . . Less than a century ago the medical profession had to face this problem in a most serious form. Like the hands of the average layman, the hands of medical men were equally as filthy. Now, thanks to our knowledge of bacteriology, we know when and how to wash our hands so as to avoid doing as did our predecessors in the medical profession." We can testify from our own observation that a good deal less than half a century ago we have seen surgeons of the highest eminence, not only handle patients, but operate, with hands which, even in a non-bacteriological sense, were far from clean. Dr. Eccles complains that the "average sensual man," as Matthew Arnold called him, does not wash his hands enough. Bacteriologists, he says, have shown that after a dozen or so of ordinary persons have dipped their hands into a basin of water the liquid is found to contain large numbers of colon bacilli. He adds that hands that can pollute water by a mere touch cannot possibly be shaken without leaving behind evidences of unnamable dirt. This makes us wonder how much disease the President of the United States scatters about him when five or six thousand citizens insist on shaking hands with him. Even if his own hands are germ-free to start with, they must very soon "bear evidence of unnamable dirt," and distribute it liberally among the crowd. For dirt is the opposite of mercy: it curses him that gives and him that takes.

We will not follow Dr. Eccles through the harrowing details of the contamination of bread, fruit, vegetables, pastry, and money, by the people who handle these things. "Cook's son, duke's son"—we all fail to come up to the level of manual purity which Dr. Eccles indicates as necessary to our sanitary salvation.

We would not have it thought that we share the opinion of Walker "the Original," who held that a healthy skin needed no washing, as it did all that was required for itself. That dirty hands may carry the seeds of disease and death is a truism. But are we therefore to spend all our time washing our hands? Has Dr. Eccles considered what thorough purification of the hands really means? Mr. Lockwood showed long ago in this JOURNAL[1] how difficult it is to disinfect the hands. Scrubbing with soap and water is generally as effectual as, in Sydney Smith's phrase, rubbing the dome of St. Paul's to tickle the Dean and Chapter. The following is the method which, after many experiments, he found least hurtful to the hands and most effective in disinfecting the skin:[2] "After the scissors have been used the hands and arms are first scrubbed for three minutes in hot water and soap to remove all dirt and grease. The scrubbing brush ought to be steamed or boiled before use, and kept in 1 in 1,000 biniodide of mercury solution. When the soapsuds have been thoroughly washed away with plenty of clean water, the hands and arms are thoroughly soaked and rubbed for not less than two minutes with a solution of biniodide of mercury in methylated spirit, 1 part of biniodide in 500 parts of spirit. Hands which cannot endure 5 per cent. carbolic acid lotion, or 1 in 1,000 sublimate, bear frequent treatment with the spirit and biniodide. After the spirit and biniodide has been used for not less than two minutes it is washed off with

[1] BRITISH MEDICAL JOURNAL, October 25th, 1890; May 23th, 1892; January 27th, 1894, and July 11th, 1896.
[2] Ibid., July 11th, 1896, p. 60.

a biniodide of mercury lotion, 1 in 2,000 or 1 in 4,000." Even after all this lustration, some hands were found to be septic! Sir Watson Cheyne made some experiments on the disinfection of the skin by the following method. He says[1]: "On the morning of the day of the operation the skin was washed with soap and strong mixture (1 in 20 carbolic lotion containing $\frac{1}{500}$ part of corrosive sublimate in solution) and shaved. It was then scrubbed with turpentine, and subsequently with soap and strong mixture and a nailbrush. A piece of gauze saturated with strong mixture was then fixed over the part. When I came four or six hours later I repeated the whole process again very thoroughly. Even with 1 in 20 carbolic lotion alone, without turpentine or sublimate, I found that in parts where the skin was thin, and in children, disinfection was satisfactory, but in other parts, such as the axilla in adults, growth took place. This plan was, however, only used for the sake of experiment, and is not that which I employ." We only recall these experiments to show that the disinfection of the hands, not mere freedom from visible dirt—and this is what Dr. Eccles mean—is by no means an easy thing to accomplish.

We are as keenly alive to the importance of cleanliness as Dr. Eccles, but we have shown that even the ritual ablutions of the strictest Mohammedan are insufficient to make our hands free from possibilities of pollution. For this purpose all the resources of the laboratory are required, and even when these are used in the most thorough-going manner, some germs of things evil may be left. Dr. Eccles's teaching, if it is to be followed out literally, would make us live under a dispensation of asepsis which recalls Sir Toby Belch's recommendations to Sir Andrew Aguecheek in the matter of dancing: "Why dost thou not go to church in a galliard, and come home in a coranto? My very walk should be a jig! I would not so much as make water, but in a sink-a-pace." In the matter of hygiene we must take a good deal on trust; fortunately a healthy body has within it means of protection against the inroads of infective microbes. While admitting that Dr. Eccles is right in theory, we have thought it desirable to point out that it is impossible to carry out his precepts in practice. The danger of preaching counsels of perfection as vital rules of conduct is that the vaulting ambition of the enthusiast may o'erleap itself, and neutralize his well-meant efforts by exciting ridicule.

VEGETARIANISM AND INTESTINAL INFECTION.

SOME years ago,[2] in the course of investigations into infantile diarrhoea, Dr. H. Tissier distinguished a specific form caused by the *B. perfringens*, an organism met with normally in the intestines of adults, bnt not in infants after the discharge of meconium. This infection is characterized by the presence of frothy green stools, the child ceases to gain weight, loses its appetite, and becomes restless.

In breast-fed infants the disease is comparatively benign, but in those fed on the bottle it may be rapidly fatal, and the younger the child the greater the danger. Bacteriological examination of the stools shows disappearance of the *B. bifidus*, with growth of many cocco-bacilli and diplococci and the appearance of various abnormal forms, of which two were found constantly—the *B. perfringens* and the B. III of Rodella, the latter being a non-pathogenic organism. Experiments made by feeding a kitten with a pure culture of the *B. perfringens* produced rapidly fatal diarrhoea; the virulence of the organism is shown also by the case of a woman who suckled an infant which was at the time infected by this organism; soon afterwards her own healthy baby was attacked by the same symptoms, suggesting that the infection had been communicated by the breast. In the treatment of this disease M. Tissier has found the usual remedies useless. If the child is breast-fed he recommends that the nurse should be put upon a vegetarian diet with an increased amount of sugar and fat, and before each feed he gives the child a tablespoonful of a 10 per cent. solution of lactose. If it is bottle-fed he stops cow's milk and substitutes for it glucose, lactose, saccharose, or starch. In addition the child is given one or two teaspoonfuls of a pure culture of the *B. paralactici* of Kosaï, which has been kept in an incubator at a temperature of 37° C. for five or six days. This organism is itself harmless, but checks the growth of the *B. perfringens*, and thus brings about a cure.

At a meeting of the Société de Biologie a year later M. Tissier referred[3] again to the question, and asserted that cases of gastro-enteritis caused by infection of the intestine with abnormal bacteria could be successfully treated by replacing these pathological microbes by normal intestinal bacteria. His treatment consists in putting the patient on a strict vegetarian diet, and giving daily a bottle of water containing 50 grams ($1\frac{3}{4}$ oz.) of lactose, and two wineglassfuls of a pure culture of the *B. acidi paralactici*, or of a mixture of this with the *B. bifidus*. Under this treatment the stools, he stated, lost their fetid character, and all the symptoms disappeared. He claimed that if the treatment is maintained for two and a half months the results are permanent, and the patient may then return with safety to a less severe regimen.

Quite recently[4] in another contribution to the subject Dr. Tissier maintains that intestinal putrefaction plays a great part in the causation of intestinal infections, putrefactive bacteria preparing the soil for the growth of pathogenic bacteria. To prevent this the intestinal chemical medium must be rendered uninhabitable by noxious species and favourable to those which arrest putrefaction and toxic action. For this purpose he prescribes a regimen in which sugar, starches, and fats hold the chief place and proteid matters are reduced to a minimum; he rejects not only eggs, cheese, and meat of all sorts, but also cow's milk, the casein of which he regards as the special pabulum of certain dangerous microbes. Vegetable albumen is less putrefiable, and has, further, the advantage that it is always accompanied by at least three times its weight of carbohydrates. A vegetable diet containing only a small proportion of pulses affords the least opportunity for the growth of putrefactive bacteria. Strict vegetarians would insist that all vegetables must be cooked with vegetable fats such as olive oil; but he does not go so far, and allows butter, bouillon made from meat, and the gravy of cooked meat, and he also adds in certain cases a small quantity of grated cheese. To prove that it could be followed without danger by a normal person engaged in physical or intellectual work, he has prescribed this diet for two years to

[1] BRITISH MEDICAL JOURNAL, August, 1897, p. 374.
[2] *Ann. de l'Institut. Pasteur*, May, 1905.
[3] *La Semaine Médicale*, 1906, p. 104.
[4] *La Tribune Médicale*, 1910, No. 4.

two healthy adults who had not suffered from any previous illness. Their food in twenty-four hours consisted of chocolate 40 grams (1⅓ oz.), fats 80 grams (2⅔ oz.), bread 270 grams (9 oz.), green vegetables 420 grams (14 oz.), mushrooms 175 grams (6 oz.), potatoes 345 grams (11½ oz.), honey or jam 25 grams (⅞ oz.), fruit 50 grams (1⅔ oz.). All the vegetables were weighed before being cooked. This diet gave proteid 42 to 50 grams, fat 103 to 143 grams, carbohydrates 225 to 249 grams, which furnished from 2,100 to 2,280 heat units. The first, a medical practitioner, aged 43, measured 1.66 metres (5 ft. 4½ in.) and weighed 64 kilograms (9 st. 2 lb.; the other, a chemist, aged 33, measured 1.65 metres (5 ft. 4 in.) and weighed 66 kilograms (9 st. 6 lb.) In addition to their ordinary work, they were in the habit of taking exercise by walking or cycling and employed their vacations in outdoor exercises. On this diet all their bodily functions were accomplished as well as before, and the diet proved equally satisfactory on occasions of special physical activity, such as long walks of 20 to 30 kilometres (12 to 20 miles) and a long bicycle ride of 200 kilometres (120 miles) in wind and rain. During this long ride the diet was a little more, giving a total of 2,703 heat units, and containing 61 grams of proteid, 89 of fat, and 404 of carbohydrates. M. Tissier points out that according to the ordinary data the food required for the work done on this bicycle journey should amount to 7,060 heat units, while as an adult at rest, according to the same authority, requires 1,950 heat units, the bicyclist ought to have been supplied with 9,010 heat units, nearly four times what he actually had, yet he only lost 1 lb. in weight during the twenty-four hours, and this was recovered the next day. He thinks the necessary conclusion to be drawn is that physiologists have for the most part been studying men who ate a great deal too much, and, in his opinion, workmen would find themselves able to do more work if they ate half the quantity they do at present.

THE HOUSING DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

IN the report of the Select Committee of the House of Commons on the Housing of the Working Classes Acts, over which Sir John Dickson Poynder presided, it was stated that the formation of a separate Housing Department of the State or Central Housing Commission had been suggested, and there appeared to be a great deal to be said in favour of the proposal. There were, however, several practical difficulties in the way of establishing such an independent central authority, and the committee recommended, therefore, the creation of an expert departmental staff in connexion with the Local Government Board similar to the railway department of the Board of Trade and other special departments in the public offices. During the debates on the Housing and Town Planning Bill in the House of Commons the President of the Local Government Board assented to the principle of this recommendation, and a beginning has been made by the appointment as a medical inspector of the board of Dr. Thomas Carnwath, assistant medical officer of health to the city of Manchester. Among the duties allotted to Dr. Carnwath will no doubt be included the holding of inquiries on behalf of the board upon complaint being made to that authority by four inhabitant householders of a district, by the county council, or by the parish council or parish meeting that local authorities have failed to exercise their powers under the Housing Acts where those powers ought to have been exercised. The board may of its own initiative make an order requiring a district council to cause an inspection of the district to be made with a view to ascertaining the existence in it of uninhabitable houses, and appeal may be made to the board by owners who consider themselves aggrieved by the requirements of local authorities in the administration of the Housing Acts. In these particulars the services of the newly appointed inspector may well be requisitioned.

INSURANCE OF MOTOR CARS.

SINCE the use of a motor car has become so much more a matter of business than pleasure, the question of insurance has received more and more attention from owners, especially from medical men, who when an accident befalls a car experience not only the same inconvenience as every other user, and the loss due to cost of repairs, but find their arrangements for the conduct of their practice seriously upset. The Medical Insurance Committee (429, Strand) a a year or more ago drew attention to the Red Cross policies, including a special doctors' policy issued through Lloyds, and the secretary of the Committee has since acted as agent for the "Red Cross" Indemnity Association, and has arranged a number of policies. This year a new form of Red Cross policy has been drawn up called the Doctors' "C.C." (complete cover) policy. Some particulars of the provisions of this policy, which seems to deserve its name, are given at p. 411. It covers all sorts of accidents to the car, excluding punctures and bursts, and wear and tear, and includes also an indemnity to the assured against third party claims against him or any member of his family, or any friend who is authorized by him to drive the car. The conditions as to beginning and paying for repairs appear liberal, and are further simplified if the car is within reach of one of a long list of authorized repairers. If no claim is made under a policy during the period for which it is in force 25 per cent. of the premium will be returned to the assured, whether the policy be renewed or not. In addition the policy provides compensation at the rate of £1 a day whilst the owner's car is being repaired.

MECHANO-THERAPEUTICS.

ALTHOUGH methods of treatment by massage and electricity are commonly employed by practitioners in this country, there has been a lamentable lagging in the introduction of those mechanical appliances for the treatment of disease which were invented by Dr. Gustav Zander as early as 1857, and now are to be found in admirable institutions at many health resorts in Switzerland, Germany, and France, as well as in the principal Continental cities. In reviewing a French book on this subject some time ago, it was stated that no such institution existed in Great Britain; even in prosperous bathing towns like Harrogate, Buxton, Bath, or Leamington, there has not been sufficient enterprise to establish a Zander Institute. Perhaps a partial explanation may be that a Zander Institute was established in London about twenty-five years ago which had an unfortunate history. It was promoted by a competent Swedish medical practitioner, and was afforded the countenance, encouragement, and support of the leaders of the medical profession in London, but was transferred to a man named Harness, who soon made it notorious to the infinite annoyance of those who had allowed their names to be used in the first instance. Harness's methods were a public scandal, but he spent much money in advertising and enjoyed

immunity until the *Pall Mall Gazette* had the public spirit to expose him. Driven to defend himself by an action for libel, he failed to convince the jury, and for many years afterwards the Zander system, in spite of its growing popularity on the Continent, did not exist here; but we desire to say that when we stated that there was no place in Great Britain where the treatment could be obtained we were speaking without full knowledge, and now desire to make amends. Dr. Gustav Hamel, who possesses the diplomas of the London Conjoint Board, and is also an M.D. of the University of Berne, carries on at 103, Mount Street, a well-equipped establishment containing a full set of the Zander machines for passive movement, percussion, and vibration; and, although we think there should be a similar installation in every great centre, as well as in our principal health resorts, we have to thank him for making a beginning. It is a matter for congratulation that the work is in the hands of a registered medical practitioner, whose standing and position are a guarantee for the proper treatment of those patients who consult him. Dr. Hamel prefers to treat only those patients who are sent to him by medical practitioners, and this is his general practice. It is not, perhaps, easy to make such a rule absolute, but we are satisfied that it is his wish to act in accordance with its spirit. The value of the method in cases in which passive exercises are required has been fully established. The machine regulates the movements more accurately than is possible by the hand, and patients who shrink from having stiff joints moved by a nurse gain confidence in a machine which is under control, and noting the increase of movement on the scale speedily learn to co-operate. The strength of the active exercises is regulated by means of graduated levers and sliding weights, so that a resistance from zero to the maximum can be obtained, and the position of the lever is so arranged that the resistance increases when the muscle begins to contract, and diminishes towards the end, in compliance with physiological laws of muscular contraction. Machines for passive exercises which can be used for rotary movements of the body in different planes, and the mechanical horse are of use in constipation and indigestion, and other machines for breathing exercises, for development of the chest, for pendulum movements of the limbs, or for applying mechanical vibration, percussion, kneading, and friction, can be employed for various curative purposes. The amount of exercise, as well as the extent and range of each movement, can be adjusted and regulated, so that in this way exercise can be prescribed by the physician in measurable quantity to suit individual cases. The good effects of the mechano-therapy received striking testimony from Herr Boedeker, President of the German Imperial Insurance Company, who at the congress in Milan in 1894 stated that "in 1888, before the use of systematic exercises in cases of accidents, the proportion of injured persons whose treatment exceeded twenty weeks in duration was more than 50 per cent.; in 1893 the systematic treatment of mechano-therapy was found to have reduced the percentage to 2 per cent." The great firm of Krupp has found it worth while to have an institute of its own for the treatment of its injured workmen. We have no doubt that a method which has proved of such benefit in France and Germany will be found equally useful in this country if given a fair trial.

NON-DIABETIC GLYCOSURIA.

IT is of practical importance to bear in mind that the presence of sugar in the urine does not always mean diabetes. As an example, attention may be drawn to the cases related by Dr. K. Funck[1] of enterocolitis associated with glycosuria, a condition often confounded with diabetes, to the detriment of the patient, as it is aggravated by antidiabetic diet, whereas on appropriate treatment it and the glycosuria rapidly disappear. His first case was a man aged 33, who had suffered for a year from diarrhoea, colic, and flatulence. He had lost a good deal of flesh, and presented a dry skin with eczema and pruritus of the legs. The urine contained 1.8 per cent. of sugar, but there was neither polyuria nor thirst. Under diet and medicine suited to his condition he recovered in three weeks, and when, six months later, he had an attack of influenza followed by appendicitis, for which an operation had to be performed, there was no recurrence of the glycosuria. The second case was also rapidly cured, but the slightest indiscretion in diet was followed by a return of the bowel trouble accompanied by glycosuria.

THE DOCTOR'S DOORKEEPER.

THE doctor's doorkeeper is often, in his own eyes, a more important personage than his master. Indeed, we have known more than one who gave people the impression that he, as it were, "ran" the oracle whose inspired utterances were, in a literal sense, "golden opinions." It might not occur to the untutored mind that any special talent was needed for the discharge of the functions of doorkeeper. But if the doctor has a large practice among fashionable folk, he is to a considerable extent dependent on the loyalty, discretion, and tactfulness of his hall porter. That functionary has to keep restive patients in good humour; to regulate admission to the sanctuary without seeming to show favour; and sometimes to assume the responsibility of his master's forgetfulness. Hall porters range in type from the sombre person who solemnly ushers you as into a vault where you are to be embalmed, to the patronizingly genial person who will condescend to give you his views on things in general. He will even, whenever he sees the right kind of person, hold him with his glittering eye while he professes to reveal the tricks of the trade, point out where "me and the doctor differ," and refer to "our assistant" as to a sort of domestic animal. His manners vary from bland politeness in the prospect of a probable tip, to bullying ferocity where the patient is obviously poor. This variety of doorkeeper must necessarily be in the full vigour of life. There is another type—the grey-haired dignified retainer who is kept mainly for show. He is too stately for a place where there is much business. Then there is the discreet Abigail of the obstetrician, who besides opening the door assists at the mystic rites within. There must be a certain congruity between the medical Prospero and his ministering Ariel. Thus it would be unseemly if a fervid advocate of temperance had a doorkeeper with a countenance decorated with grog blossoms, or a throat specialist had one with a hoarse voice. The chief function of a doorkeeper was once described to us by one of the tribe as never to allow any one who came prepared to pay a fee to escape him. To achieve this result he stuck at nothing in the way of ingenious perversion of the truth, salving such conscience as he had with the reflection that the blame of all his lies would be laid on the shoulders of his master. This man—who, together with the doctor whom he served, has long passed "beyond these voices"—might have stepped out of the old comedy where the unscrupulous valet plays so large a part. He had a vocabulary all his

[1] *Muench. med. Woch.*, October 12th, 1909.

own. He spoke of the patients as his "proteegees"; he would delicately allude to a young couple performing the "martial rites"; he would describe a person whom he disliked as a regular "Mephistofeeles," with a "déamonical" smile; he would speak of "gratitious" patients, whom he frankly despised; of a "maligant" tumour attached by a small "pedestal"; of blood "codgilating"; of some old patient who had written his "reminiscénes"; of the sword of "Damocele" being suspended over his head (when he had been threatened with dismissal for drunkenness). He would sympathetically say that a lady seemed as if she were suffering from a feeling of thorough "debiliation." When taxed with lying he would indignantly declare that he would not have his veracity "impung-ed," and that his statement could not be "counterfuted." Such as he was, his value to his master was incalculable. He would spur the doctor on to work when he was inclined to dawdle, and he helped to prepare *coups de théâtre* which had a marvellous psychical influence on the patient. He remembered a face which he had seen twenty-five years before; would by dextrous questioning extract the name and then look up the record in the casebook. This he would pin on the door of one of the two consulting rooms, which communicated by a narrow passage. There the doctor would study it carefully, and then going in would greet the patient with the familiarity of old acquaintance. It was in somewhat the same way that Napoleon prepared himself to remember the veterans who had fought under him at Wagram and Austerlitz. Such a one must have been the faithful "Charles" who figures in the life of Sir Astley Cooper.

ANTIVACCINISTS AT THE GENERAL ELECTION.

ONE of the noteworthy features of the General Election of 1910 is the failure to secure re-election of a very large number of candidates specially marked for the approval and support of the National Antivaccination League. Immediately after the General Election of 1906 the *Vaccination Inquirer* (February 1st, 1906) devoted no less than thirteen pages to an analysis of the views on vaccination of a large number of members elected to represent English constituencies. A reference to this analysis discloses the fact that over forty of the members then elected who were regarded as friends and sympathizers of the league are not returned as members in 1910. Only in one or two instances is this due to retirement, the bulk being candidates who were beaten at the polls in the recent elections. This represents about 50 per cent. of those who were claimed by the antivaccinators as being pledged to their cause, or sufficiently sympathetic to receive the official support of the league. The current issue of the *Vaccination Inquirer*, referring to the "bad reports" to hand on going to press, says: "The most regrettable item of bad news is the defeat of our virtual leader in the last Parliament. . . . Alas, for the fickleness of voters, although Mr. Lupton defeated Mr. Chaplin by 293 votes, he has now himself suffered defeat at the hands of the supporters of Mr. Royds by 1,265." During the progress of the election we commented in these columns (January 15th) on the great activity of this league, and its special attention to the Sleaford Division. The Organizing Secretary and Lecturer of the league conducted a most vigorous campaign. All this has been of no avail, and it is not unreasonable to attribute Mr. Lupton's overwhelming defeat to the persistent and successful manner in which his fallacies have been controverted and his exaggerations corrected. The circumstances of the Sleaford election afford undoubted evidence of popular condemnation of antivaccinist and antivivisection propaganda conducted on lines and by methods such as those adopted by Mr. Lupton. In other places throughout the country, where previous success had been attributed to the efforts of antivaccinators, the candidates favoured and supported have been defeated, notwithstanding most strenuous exertions. In Gloucester, for example, the local branch of the Antivaccination League, under the presidency of Dr. Hadwen, failed to secure the re-election of the Right Hon. Russell Rea. A special campaign was conducted on his behalf. We do not know to what extent this contributed to his failure, but it may confidently be assumed that this campaign would have been claimed as the secret of success if success had been recorded.

MEDICINE IN IBSEN'S PLAYS.

HENRIK IBSEN makes many references to medical subjects in his works. In *An Enemy of the People* he gives a vivid picture of the struggle between a doctor who has at heart the good of the inhabitants of the town of which he is medical officer and the municipal authorities, who look mainly—as members of similar bodies nearer home have sometimes been known to do—to their own interests as exploiters of public property. The burden of a syphilitic inheritance forms the subject of *Ghosts*. In *A Doll's House* Dr. Rank watches in himself the development of inherited disease in his "poor innocent spine," which he knows to be inevitably fatal. There are other allusions to medical matters, but *An Enemy of the People* and *Ghosts* would suffice to show that Ibsen had some familiarity with medicine. This is explained by the fact that shortly before his sixteenth birthday he was apprenticed to an apothecary in the little town of Grimstad, between Arendal and Christianssand, at the extreme south-east corner of the Norwegian coast. There he lived and worked making pills and ointments and spreading plasters for six years. So busy was he in the shop that, as he himself tells us, he had to steal whatever time he could for study. At Grimstad he wrote his first play, a three-act tragedy on the conspiracy of Catiline, of which only about thirty copies were sold. In 1850, at the age of 21, Ibsen left his gallipots, and went out into the world to seek his fortune as a poet. In a letter to the *Times* dated February 1st, 1910, Mr. Edmund Gosse says the house at Skien in which Ibsen was born having been destroyed, the melancholy, but completely water-tight, wooden house in Grimstad, where he slept in a garret, is all that remains to recall his youth. A national movement has been set on foot in Norway to purchase it, and to fill it with memorials and biographical objects.

BLACKWATER FEVER.

DRS. WAKELIN BARRATT AND WARRINGTON YORKE have published the results of investigations into the mode of production of blackwater fever, undertaken in Nyasaland for the expedition of the Liverpool School of Tropical Medicine.[1] The publication is full of important data; the work has evidently been done with minute care and exactness, facts are carefully separated from assumptions, and theories are not built up on appearances. It is probably on this account that the authors do not pretend to offer the reader a complete account of how blackwater fever is produced. While they prove beyond dispute that quinine in the alkaloidal state

[1] An Investigation into the Mechanism of Production of Blackwater Fever. By J. O. Wakelin Barratt, M.D., D.Sc., and Warrington Yorke, M.D., *Annals of Tropical Medicine and Parasitology*, Vol. iii, No. 1. Liverpool University Press, 1909. (Pp. 256; 2 plates, 39 illustrations, and many tables. 10s. 6d.)

breaks up haemoglobin at a monomolecular rate, they hold that in the body the concentration of quinine is never sufficient to produce a direct action on the blood cells. More than this, they record instances in which the black water disappeared during the exhibition of quinine. They have faced the mystery of the solution of blood cells, and have distinctly refused to be led away by stray clinical facts. The relationship between haemoglobinuria and haemoglobinaemia is carefully studied both in blackwater fever and as an experimental condition in animals, and the conclusion is arrived at that the former is a result in blackwater fever of an accompanying haemoglobinaemia. The state of the kidneys in this disease is fully dealt with, and while it is concluded that the sole pathological condition existing in these organs during the simple uncomplicated haemoglobinuria of blackwater fever appears to be a blocking of the lumen of the renal tubules, they refuse to commit themselves either as to the nature of this brown blocking material or even as to the effect which it exercises on the secretion of urine or transmission of haemoglobin. A minute account of the cases observed is appended, and the whole work is freely interspersed with good illustrations, diagrams, and tables. Taken in its entirety, the report contains a vast amount of detail on this obscure condition, and the study of it may be all the more recommended since the authors have refrained from presenting theories which might appear to explain all the facts but which might well be overthrown in favour of others within the course of a year or so.

"SECRET REMEDIES."

WE have received during the last few months a large number of letters with reference to the volume *Secret Remedies*, published by the British Medical Association last autumn. To most of these private replies have been returned, but we may here state for general information that, in selecting the secret remedies which should be analysed, those were for the most part chosen which were being largely advertised, or were believed to have large sales. Additions are constantly being made to the quack preparations advertised and sold, while others appear to drop out of fashion. As we had occasion to remark last week, their composition may be almost anything suggested by the fancy of the proprietor; but, as is amply shown in the book, the imagination of these persons is not much more highly developed than their knowledge of therapeutics and materia medica; for the most part their preparations contain only the most commonplace and cheapest drugs. That the publication of the book has done good in giving the public a knowledge of the curious impudence with which its want of acquaintance with drugs is exploited, there are many evidences; one of the most satisfactory, perhaps, is that the sale of *Secret Remedies* continues to be rapid. The issue is now in its sixty-second thousand. The price of the book is 1s., and it can be obtained through any bookseller, or direct from the Financial Secretary and Business Manager, 429, Strand, London, W.C., post free, 1s. 3d.

THE meeting of the British Association for the Advancement of Science, which is to be held this year at Sheffield, under the presidency of the Rev. T. G. Bonney, F.R.S., Emeritus Professor of Geology in University College, London, and Honorary Canon of Manchester, will begin on August 31st. The President of the Section of Physiology is Dr. A. B. Macallum, Professor of Physiological Chemistry in the University of Toronto.

SCIENCE NOTES.

To a comparative study of the structure, physiology, and diseases of the lower animals we owe many important advances in medical science. The dog has been and is the friend of man in more than the usually accepted sense of the expression. Hitherto attention has been almost entirely confined to the mammalia, but it is quite possible that further observations on the lower vertebrates would be of more than academic interest. The present Cancer Commission, recognizing this, has extended its investigations not only to fishes—practically the lowest class of vertebrates—but also to invertebrates. The obvious advantage to be gained is a more accurate knowledge of the development and function of various organs and of the modifications they have undergone and are capable of acquiring. Small and apparently irrelevant facts not infrequently prove of as great moment as the big facts, and we often fail to realize how important minor details, insignificant in themselves, may suddenly and unexpectedly become. The demonstrated presence of eosinophile leucocytes in the blood of Teleostean fishes is not a discovery of paramount importance, nor would we maintain that it is likely to shed much light on our present unsatisfactory knowledge of the blood and blood diseases, but it is a fact that may or may not have to be reckoned with, and for the moment it is interesting. Mlle. Anna Drzewina has published a preliminary note[1] on the matter. She has studied the blood of Teleostean fishes for several years, and her observations may therefore be regarded as fairly comprehensive. Until 1902 it was generally accepted that there were no eosinophile elements in fishes' blood, but in that year Meinertz showed that they occurred in the roach, perch, and tench. Mlle. Drzewina has studied forty species of fish, but in only eight has she succeeded in finding eosinophiles. Their presence is therefore not general, nor are they invariably present in the species in which they occur. They are most frequent and abundant in the *Labridae* or wrasses, four of the eight species belonging to this family. It is curious that none of the *Gadidae* or *Pleuronectidae*, which are our common food fishes, appear to have eosinophile cells; no mention is made of these having been examined, but some of these could hardly fail to have been included in the forty. The acidophile granules take on a bright red colour with the ordinary staining reagents. In two cases—the garpike and lesser weaver—neutrophile leucocytes were also present, and even occasionally transitional forms. No indication is given of the relative percentage of these eosinophiles or of their connexion with other peculiarities or characters of the fishes in question, but we may expect to learn something about these matters when a fuller account of the work is published.

Extensive investigations into the bactericidal action of quartz lamps of mercury vapour, and the application of these lamps to the sterilization of drinking water, have lately been carried out by Dr. Th. Nogier, of Lyons.[2] His experiments have been made partly with the lamp of Kromayer and partly with a quartz lamp of his own construction. After repeated trials he has proved that the rays of small wave length possess a bactericidal action upon water within a radius of 30 cm. from the light source, at which distance the destruction of pathogenic microbes requires an irradiation of about one minute. The effect is yet more marked when the lamp is immersed in the water instead of being placed at a certain distance away from it. In a tank, having a capacity of 115 litres (about 26 gallons), he suspended in the water with which it was filled a quartz lamp, working at 9 ampères, 135 volts, and achieved complete sterilization, effecting the destruction of the colon and typhoid bacilli within one or two minutes. Then he proceeded to submit plants and animals to water sterilized by light. There was no difference between irradiated and non-irradiated water in the development of algae (conferva, spirogyra); the germination of water plants, such as certain grasses and cress, was in no way retarded, while larger plants and small animals gave no evidence of injury after its exclusive use. The author

[1] *Compt. Rendus Soc. Biol.*, lxvi, 1909, pp. 514–6.
[2] *Archives d'électricité médicale*, Bordeaux, January 10th, 1910.

states that sterilization is stopped or impeded by colloid substances in suspension in liquids. Although, in the case of water abounding in colon bacilli, sterilization was completed after one minute's irradiation up to within 30 centimetres of the lamp, yet when a peptone solution was added to the water before irradiation the sterilizing effect was not established at one-tenth of this distance in spite of ten times as long an exposure. Nogier denies very positively that sterilization is to be attributed to ozone or to the oxidation of the water or to anything save the light. Moreover, the ultra-violet radiations, he says, destroy not only the extremely simple organisms, but also the more complicated cells. After being exposed for some moments to the rays of the quartz lamp, a plant cell no longer possesses power to assimilate, its turgescence disappears, and it practically ceases to live, although the effect is not immediately apparent. The floral organization seems to suffer particularly from the inhibitory action of the radiations, as though the cells concerned in the future development of the plant were more sensitive than others to such external influences. He is unable to discover any considerable chemical changes in the sterilized water, and he is of opinion that the chemical composition is preserved despite the irradiations. In considering the industrial application of the subject, he describes his own apparatus for sterilizing the drinking-water supply. This consists of a mercury vapour lamp suspended by its electrodes, and fed by a continuous current. The lamp is permeable to rays of short wave-length, and the metal envelope which encloses it receives the water to be sterilized and contains a diaphragm arrangement for forcing the water against the lamp wall. The supply is carefully regulated by an automatically controlled tap, with an ingenious arrangement for ensuring that no water is passed when the lamp is not working at its optimum. While this sterilizer destroys the injurious germs and poisons, he claims that it conserves salts which render the water agreeable to the taste and salutary to the health, and that water thus sterilized by light remains fresh and without odour.

There has long been a desire amongst those interested in evolution and evolutionary theories to make some more or less accurate estimate of the extent to which man is and has been subject to the laws of evolution. It is generally agreed that, to whatever degree natural selection may have acted in evolving its highest zoological type, as soon as the type was definitely established it ceased to be entirely subservient to the influences which had produced it, and that in gradually increasing measure it began to make laws unto itself, and to substitute those for the laws which govern the rise and fall of types throughout the rest of the natural world. These new laws, however, in their turn would appear to be becoming as hard and fast in their action on mankind as the previous less complex laws of Nature were at an earlier period. Mr. F. W. Headley is one of the latest to endeavour to interpret modern social life from a biological standpoint. In a most readable book[1] he deals with the position of man as a social unit under the selective forces which have now taken the place of natural selection, and particularly with reference to present-day socialism. The new elements which come under selective action are those which derive their origin mainly from man's reasoning faculty, such as honesty, uprightness, generosity. Unfortunately, Mr. Headley in this connexion is distinctly idealistic, and takes no account of the baser human qualities which, we regret to admit, so frequently play a most important part in the struggle for existence. Selfishness, unscrupulousness, and the ability to drive a hard bargain can hardly be denied to be attributes which in this commercial age tend to the preservation and prosperity, financial and otherwise, of the individual. Opinions are divided as to whether we are evolving a nobler or an inferior race, but everything seems to point to the fact—and modern conditions certainly favour it—that physically at least we are on the down grade. Mental qualities, in some cases good, in many bad, are the subjects of this humanized natural selection, and physical ability is allowed to look after itself. It is encouraging, however, to recollect that good health still is as important a factor as it was in the time of man's earliest evolution. It is true that disease, in one or other form, is not an actual bar to social advancement, but in the long run the race is to the stout of wind. It need hardly be mentioned, then, that medicine, in particular prophylactic and preventive medicine, must be reckoned amongst the forces influencing man's future destiny. Medical prescience takes, to a considerable extent, the place of "Nature's kindly care," and enhances the prospects of survival of its protégés. Mr. Headley deals with many other matters in a lucid and relevant fashion. He shows the value of individual industry and private enterprise, contrasting the latter with the comparative inefficiency of enterprise by Government and corporate bodies. Socialism, he holds, would abolish this individual striving, and so make for a dead uniformity in which there would be no evolutionary progress.

[1] *Darwinism and Modern Socialism.* By F. W. Headley. London: Methuen and Co. 1909.

Some time ago Mr. Walter Heape read a paper before the Royal Society on the proportion of the sexes produced by whites and coloured peoples in Cuba. He sets forth several matters of much interest from a bio-medical point of view. In dealing with such questions there is always the difficulty of securing sufficiently large numbers, and in this respect the artificial experimental method is often unreliable on account of the smallness of the numbers dealt with. Mr. Heape's attention was drawn to the fact that the medical officer of Cuba supplied separate details of the births and still-births of whites and coloured people on the island, and that these records were further subdivided into legitimate and illegitimate births. During a period of three years there was a total production of nearly 180,000, and from the details Mr. Heape has drawn up a number of tables. On studying these the first important point to be noticed is the difference in the proportion of the sexes produced by the two races, in that the whites produce a considerably larger proportion of males than the coloured people. This holds both in the case of births and still-births. The next noteworthy feature is the consistent variation in the proportion of the sexes produced from legitimate or illegitimate union. This variation is to the effect of an increased proportion of female children from illegitimate union, and holds good for both races. The deductions from this fact are based on the statement that illegitimate union amongst civilized peoples is due to individual characteristics in the woman which have for their origin a specially active sexuality. This increased production of females is accordingly an individual matter not to be accounted for by any law of heredity, but rather associated with physiological conditions affecting the metabolic activity of the woman. A further consideration of the statistics under investigation shows that there are two well-marked breeding seasons each year, and that they have no relation to the marriage season. They are correlated, in fact, with marked changes in climate—namely, in the autumn on the change from great heat to cooler weather, and in the spring, and are thus associated with periods of increased metabolism. At these times the reproductive activity increases very rapidly to a maximum, and falls quite as rapidly. Following the theory that increased metabolism favours the production of female children, we should expect to find a comparative excess of females at the breeding seasons, and this is exactly what does occur, both amongst the whites and the coloured people. Here again the author insists that this variation in the sex ratio cannot be ascribed to heredity, but is associated with and due to the action of extraneous forces on the ovary. A further feature of interest which can be ascertained from the tables is the fact that whites show a more marked sensibility to influences inducing the production of females, while the converse is true for coloured people, and this is more noticeable amongst illegitimate than amongst legitimate births. This shows that the race normally producing excess of males is more amenable to forces tending to induce the production of females, and vice versa. The author considers that here is demonstrated the working of a force which limits the output of an excess of either sex, tending to make the numbers approximately equal, and this in fact is the force of heredity. In conclusion, it is worth remarking that these extraneous influences which have been referred to above, probably affect the proportionate production not only of differences in sex but also of various kinds of characters which are associated with metabolism.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

RESEARCH DEFENCE SOCIETY.

A PUBLIC lecture, promoted by the Dublin branch of the Research Defence Society, was given recently by Professor E. J. McWeeney, under the auspices of the Catholic Young Men's Society, in the St. Laurence Hall, Dublin, and was largely attended. The lecturer selected for his title, The Debt which Humanity and Science owe to Animal Experiment, and pointed out, in the first place, that in order to understand the importance of animal experimentation it was necessary to view the subject together with its surroundings, and to class it as part and parcel of the experimental movement in medicine. Those who objected to what they were pleased to call "vivisection" removed that method of research out of its proper setting, and strove to make it appear as if it were a wanton and uncalled-for exercise of cruelty towards the brute creation indulged in by men who were needlessly prying into the workings of animated nature. Against this view he strongly protested, for experiment on animals was essential to the progress of medical science. More than 90 per cent. of all the experiments done under licence in the country were of the nature of inoculations and were practically painless, and even the diseases induced by such inoculations seldom caused pain. In an experience of seventeen years he had not himself seen evidences of pain exhibited by experimentally infected animals. He had no doubt that many rabid antivivisectionists had themselves benefited by the use of drugs the value of which had been discovered by experiments on animals. The lecturer next referred to the great advances in the treatment of disease which had been made as a result of animal experimentation. To it was due practically the whole knowledge of bacteria as a cause of disease, the introduction of antiseptic surgery, the diminution in mortality from diphtheria and hydrophobia, the stamping out of yellow fever, the cure of myxoedema, and also the relief of many infectious diseases that animals suffer from. Against this the foes of experimental research could not place the saving of a single human life, nor the abolition or abatement of the ravages of even one disease. A vote of thanks to the lecturer was proposed by Monsignor FitzPatrick and seconded by Mr. E. J. Smyth, and after Professor McWeeney had replied Sir Henry Swanzy in a short speech explained the objects of the Research Defence Society. The proceedings then terminated.

ANTIVACCINATION CAMPAIGN IN WEXFORD.

In response to the request of the medical officer of the Enniscorthy Union, the Royal College of Physicians in Ireland has drawn up a statement for circulation throughout the Enniscorthy district, in the hope that it may help to check the widespread feeling against vaccination which prevails in that part of Ireland. The document points out that since the introduction of compulsory vaccination into Ireland in 1868 the mortality and incidence of small-pox has enormously decreased. In the ten years 1898–1907 the average annual mortality was only 7, as compared with a total death-roll of 96,281 in the twenty years 1831–1851, an average of 4,814 deaths a year. It is also pointed out that the purity of the vaccine lymph supplied to the public vaccinators in Ireland is guaranteed by the bacteriologist of the Irish Local Government Board. This officer states that he examines bacteriologically every batch of Government lymph on at least two occasions, and that no lymph is passed for issue unless found in all respects satisfactory.

NOTIFICATION OF TUBERCULOSIS.

The Public Health Committee of the Dublin Corporation reports that the Local Government Board, in reply to a query addressed to it, has informed the committee that there is no statutory provision under which public bodies can make arrangements for sleeping accommodation for consumptives in their own homes, and that in consequence the Board is prevented from according its sanction to the proposal to provide such accommodation. As a result, the committee has recorded its belief that it would be useless to put the Notification of Tuberculosis Act into operation, inasmuch as the committee is prevented from doing any practical work in helping poor consumptive people, or lessening the possibility of infection amongst the people who dwell in tenement houses. The absence of powers to carry out the well-intentioned plans of the Public Health Committee is no doubt unfortunate, but having regard to the amount of opposition to the Act in some parts of Ireland, and the lukewarmness in others, the wisest course would be to make the best use possible of the powers already possessed, and later, when the beneficial effects of the Act have been proved, to seek such additions to it as experience may show to be advisable.

PUBLIC HEALTH IN DUBLIN.

Details of the health statistics for the year 1909 of the city of Dublin and the four townships included in its registration area—Rathmines, Pembroke, Blackrock, and Kingstown—are now available. The total population is estimated at 398,356, of which all but some 91,000 are resident in Dublin City itself. The average number of persons to an acre is 29, the numbers varying from 8.1 in Blackrock to 38.8 in Dublin. The birth-rate for the year was 28.6 per 1,000, which is 0.1 higher than the average of the past ten years. The corrected death-rate for the whole area is 20.9, which appears to be considerably below the average of the previous ten years. The infantile mortality shows an improvement, the death-rate of children under 1 year being 143 per 1,000 births, as against 149 in the preceding year, and 159 in 1907. No deaths occurred from small-pox, and no cases of this disease appear to have been observed. The measles death-rate is 0.31 per 1,000; the total number of cases of this disease treated in the hospitals seems to have been 525; nevertheless, the figures represent a reduction on previous years. The same remark may be made of scarlet fever, which caused 25 deaths, the number of new cases treated in the hospitals during the year being 654. Of patients suffering from typhus fever, 22 were admitted to the hospitals, of whom 4 died. There was an increase in the whooping-cough mortality, which accounts for 156 deaths, or 0.39 per 1,000. In the preceding ten years the mortality from this cause varied from 48 to 239. Diphtheria also showed a slight increase, the deaths numbering 60 (0.51 per 1,000), against an average of 52. In enteric fever there was a marked decline, the death-rate being only 0.71 per 1,000 of the estimated population. The decline in the number of deaths from this disease has been comparatively steady during the past ten years, though the figure for the year 1909 is not the lowest on record. To cerebro-spinal fever 13 deaths were ascribed, the figures for the two previous years being 30 and 46 respectively. In the figures relating to tuberculous disease there is some evidence of commencing decrease; the average for the eight years ending 1908 was 4.61, but last year the figure was 3.79. Taking pulmonary phthisis alone, the average for the same eight years was 3.14, while last year it was 2.64. The figures for the principal urban areas of Ireland are also available, but, with the exception of Belfast and Londonderry, are based on the population enumerated in the census of 1901. The average density of the population of the 22 town districts of Ireland which form the basis of the weekly returns of the Registrar-General, may be noted as 20.1, the birth-rate 27.8, the death-rate from all causes 19.2, and that from zymotic diseases 1.4. There were 31,781 children born during the year, and 4,203 children died at ages under 1 year.

RICHMOND DISTRICT ASYLUM.

At a meeting of the Joint Committee of the Richmond District Asylum held on January 27th a gross estimate for the coming financial year of

£104,861 was presented and adopted. This estimate, which includes a sum of £1,161 carried forward as a deficit from the previous year's accounts, exceeds the estimate for the last financial year by £2,306. It is satisfactory, however, to note that the excess is not due to any increase in the number of patients, but is due to the unforeseen rise in the price of various commodities, to increased duties payable on tobacco and whisky, and various other items. The total number of patients has averaged about 3,140 during the past two years, and it is expected that this number will not now be largely exceeded, as the Old Age Pensions Act, by providing for many old people who are mentally broken down, has probably been the means of preventing a number of such people from entering the asylum. Additional premises, which will cost about £50,000, are at present being constructed to provide accommodation for those lunatics who are at present confined in workhouses ; but it is hoped that the increased expenditure thus involved will be more than compensated by a reduction in the demands made by the various Poor Law union authorities.

MERCERS AND ORTHOPAEDIC HOSPITALS' BAZAAR.

At the final meeting of the committee which managed the bazaar held in June last in aid of the above-mentioned hospitals, the honorary treasurer's report and the statement of accounts, duly audited, were submitted and adopted. The net profits amounted to £5,896 2s. 5d., and this sum was paid to the two hospitals. The committee passed votes of thanks to the auditors, who had made up the accounts free of charge, and also to the stall-holders and all engaged in the work of the bazaar, for their valuable services.

THE DUBLIN CORPORATION AND DUBLIN HOSPITALS.

The following notice of motion has been handed in, and will be proposed at the next meeting of the Dublin Corporation:

> That this Council request the Boards of Governors of the hospitals which receive annual grants from the Corporation to expressly stipulate for Irish manufactured goods and materials in their advertisements for tenders for supplies; and, further, that in all future appointments by aforesaid Boards of Governors that preference be given to persons of Irish birth and residence. That failing compliance with this request the Council shall reconsider the advisability of continuing its annual contribution in such particular instances.

While the desire of the promoters of this resolution to support home industries may be laudable, it is to be hoped that the Corporation will limit its resolution to the expression of a wish and will omit the minatory clause at the end. The Boards of Governors of the Dublin hospitals are, in most instances, in the position of trustees of public money, and are bound to expend their funds in accordance with the principle of obtaining the best possible value for the least possible outlay.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

SCOTTISH UNIVERSITY ELECTIONS.

THE poll for the election of a parliamentary representative of the Universities of Glasgow and Aberdeen closed on February 8th, when the result was declared as follows:

Sir H. Craik (U.)	4,879
Sir F. Pollock (U. Free Trader) ...	3,411
Majority	1,468

The electorate, it is stated, numbers 11,705.

The poll for the election of a representative of the Universities of Edinburgh and St. Andrews closed on February 10th, when the result was declared as follows:

Sir Robert Finlay (U.)	5,205
Sir Alexander Simpson (L.) ...	2,693
Majority	2,512

THE TREATMENT OF CONSUMPTIVES IN EDINBURGH.

Reference was made some weeks ago to a proposed scheme before the Public Health Committee of the Edinburgh Town Council, whereby, under an arrangement, a certain number of beds in the Royal Victoria Hospital for Consumption would be available to the medical officer of health for treatment of cases under his observation, provided that the cost to the corporation should not exceed £1,000 per annum. The desire of the Town Council, as expressed by the Public Health Committee, seemed to be to get the benefit of the information the Victoria Hospital for Consumption has, through its dispensary, been accumulating for twenty years past. When it is borne in mind that 60 per cent. of the notifications of phthisis come through the dispensary, it will be readily seen that it must acquire a considerable amount of detailed information regarding the disease of which it is desirable that the medical officer of health for the city should be in possession, so that he might know how the cases affect certain areas, streets, and houses. There have been certain instances in which successive occupants of houses have contracted the disease without having been in contact with the previous occupants. The dispensary is a voluntary institution, and if it had more funds at its disposal might be able to extend its operations in dealing with cases outside the hospital. It is thought that for a subsidy of £500 a year the city medical officer of health might receive the information in possession of the dispensary officials as to the condition of the different persons affected. A further proposal is that already indicated, that a larger sum should be paid for a certain number of beds in the hospital. The proposal was remitted to a subcommittee in order that the subject might be considered in all its bearings before coming to a resolution on any of the points raised.

CREMATION SOCIETY FORMED IN EDINBURGH.

The inaugural meeting of the Edinburgh Cremation Society was held in the City Chambers on February 3rd. The Lord Provost, who presided, explained that while he cordially agreed to take the chair he must not be held to commit himself absolutely in favour of the movement, though he quite agreed that it was high time there was some reform in burials.

The Right Hon. R. Farquharson briefly reviewed the history of the cremation movement, the opposition raised by the Government of the day, the legal persecution set on foot until it was declared by Sir James Stephen to be lawful, and to the time when the Cremation Bill was passed in 1902. Cremation, he said, was good on sanitary grounds, and public sentiment was now setting in favour of cremation. There was one argument against cremation, and it was one deserving of serious consideration, and that was whether it was just possible that the ends of justice might be frustrated in the case where a body might have to be exhumed. But it was a scandal to public administration now that there were very many bodies put into graves without proper verification and certification. Edinburgh was much behind Glasgow, where there had been a crematorium for several years.

The Rev. William Main, Trinity College Church, moved the adoption of the constitution. Prof. Harvey Littlejohn seconded, and the resolution was passed.

On the motion of Dr. Clouston, seconded by the Rev. Dr. Donald McMillan, the following office-bearers were appointed:

President—Sir Henry D. Littlejohn, M.D., LL.D. *Vice-Presidents*—Sir Alexander R. Simpson, M.D., D.Sc., LL.D.; Lady Constance Lytton, Lady Steel, Professor Thomas Hudson Beare, M.Inst.C.E.; T. S. Clouston, M.D., LL.D.; Professor Harvey Littlejohn. *Executive Council*—James Annandale, Polton; Miss Isabella Spring Brown, Rev. George Christie, B.D.; Mrs. MacLeod Easson, William Hume, Claude B. Ker, M.D.; Rev. William Main, Thomas M. Burn Murdoch, M.B., C.M.; Miss Purdie, W. G. Aitchison Robertson, M.D., D.Sc.; William Robertson, M.D., D.P.H. Mr. J. Dan Easson, B.L., 10, George Street, *Secretary*.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

The following is the scheme proposed by the Education Committee of the County Council of Inverness:

1. That for the purposes of school medical inspection the area be the whole county of Inverness, including the burgh of Inverness.

2. That the area be divided into two sections: (*a*) The mainland area, exclusive of certain schools along the western seaboard, and (*b*) the rest of the county being the said schools and the Hebrides (Skye, Harris, the Uists, and Barra).

3. That two school medical officers be appointed (who will be debarred from private practice and parochial medical appointments), one for the mainland section, at a salary of £250, rising to £300, per annum, and one for the rest of the county, who must be a fluent speaker of colloquial Gaelic, at a salary of £200, rising to £250 per annum—both officers to receive reasonable travelling and maintenance allowances according to a scale to be fixed later.

4. That, subject to the consent of the county council being obtained, the whole medical arrangements be under the supervision of the medical officer of health for the county, who will act in an advisory capacity to the committee and generally supervise and direct the work of the school medical officers, with an honorarium of £50.

5. That while the main duty of the school medical officers will be school medical inspection in accordance with the minutes and regulations of the department, and under the advisory direction of the medical officer of health, it is suggested that the county council might, with a view to promote co-operation between the school medical officers and the medical officers of public health, recommend the respective district committees of the county to appoint the school medical officers *formally* as depute or assistant district medical officers of health, but without additional remuneration from the county council or county committee.

At a recent meeting of the Elginshire Secondary Education Committee it was decided by a majority not to proceed with a scheme of medical inspection, as requested by the department, as the authority had not put the compulsory clauses of the Act into operation. The Scottish Education Department has warned the committee that it will not hesitate to avail itself of the compulsory powers conferred by Section 4 of the Education Act if the committee does not prepare and carry out a scheme for the medical inspection of school children.

At a meeting of the School Board of Aberdeen on January 27th, Dr. Rose, who has for the past year been employed by the board as its part-time medical officer, was appointed its chief medical officer at the annual salary of £550, to give his whole time, and to have the oversight and direction of such reasonable number of assistants as the board might allow him. The board resolved to accept Dr. Rose's estimate of the assistance that will be needed for fully overtaking the duties of his appointment, and to take steps in conjunction with him, after inquiry or advertisement, to select and appoint the assistance required.

HOSPITAL ACCOMMODATION IN WEST FIFE.

Owing to the number of cases now being sent from the naval base at Rosyth, the directors of the Dunfermline and West Fife Hospital informed the annual meeting of subscribers that it would be necessary to formulate a scheme for adding 15 beds to the hospital. It was estimated that about £15,000 would be required in order to provide and endow these beds.

ABERDEEN ROYAL INFIRMARY.

At a special meeting of the directors of the above institution held on February 7th, Mr. George Herbert Colt, M.A., B.C.Cantab., F.R.C.S.Eng., was appointed assistant surgeon in room of Mr. Peterkin, who was recently appointed surgeon-in-charge of the ear and throat department. The status of physician was at the same time conferred on Dr. John F. Christie, at present assistant physician in charge of the department for diseases of the skin.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

MANCHESTER.

THE MANCHESTER PROVIDENT AND CHARITY ORGANIZATION SOCIETY.

THE extent of the work undertaken by the Manchester Provident and Charity Organization Society is shown in a striking way in its annual report presented last week. The Manchester and Salford Provident Dispensary Association is affiliated with it, and other branches of its work mentioned in the report are the Savings Bank, the Surgical Aid Society, and the South African War Fund. At its convalescent home at Southport, 661 patients were received last year. Patients are there charged 15s. a week, and generally remain in the home for three weeks. It was stated that the home has a debit balance of £102, though there had been a reduction in the weekly cost for each inmate. From various funds possessed by the society grants were made to supplement the Government old age pensions, but the bulk of the persons benefited were under 70 years of age, and had the society not helped them, many would have been compelled to apply for parish relief, and would thus have been disqualified for the Government pension. Much work is done in the way of investigating cases in which applications for relief have been made to charitable institutions. In this way the society is used by the Manchester Midwives Supervising Committee in order to prevent fees being paid by the corporation to medical men called in to the aid of midwives on behalf of patients who have a wage above a fixed limit. During the year no fewer than 72,560 investigations were made on behalf of various charities and hospitals of the district in order to prevent imposition by the undeserving. The society has at present a scheme in hand for giving assistance to families in which consumption appears, and Dr. Niven, the medical officer of health for Manchester, warmly commended the idea. He said that the absence of such provision caused people to delay acknowledging their illness, and when they were obliged to acknowledge it caused them to delay seeking medical aid or the assistance of hospitals until they had reached such a stage that they were incurable. Another argument in support of the proposed scheme was that the infection of consumption took hold most readily and most strongly of systems weakened by privation.

THE PENDLETON PROVIDENT DISPENSARY.

At the annual meeting of the Pendleton Provident Dispensary, which is a branch of the Manchester and Salford Provident Dispensary Association, it was reported that the number of paying patients at the end of last year was 3,200, as compared with 3,298 at the end of 1908. The number of prescriptions dispensed during the year was 26,372, which is an average of over 8 to each member on the books. The total receipts amounted to £852, and there was now a reserve fund of £1,118. The chairman said the loss of 98 members was a serious matter. It was due partly to removals and partly to members joining the friendly societies. It was pointed out that during the last ten years there had been a decrease of 20 per cent., mostly due to the competition of the friendly societies. The members of the medical staff were re-elected, and a resolution was passed directing that a letter of sympathy in his recent illness be sent to Dr. Stewart.

THE MANCHESTER HOSPITAL WORK SOCIETY.

A crowded audience met in the Lord Mayor's parlour last week at the annual meeting of the Manchester Hospital Work Society. The principal work of the society is providing garments of various kinds, which are presented to the various hospitals for the use of the inmates. A large number of dressing-gowns have been thus presented, many being contributed by associates of the society, and others being provided out of its funds. The total income had amounted to £101, and over 2,900 garments had been distributed among the hospitals. Appreciations of the work of the society were received from the Manchester Royal Infirmary, the Salford Royal Hospital, and the St. Mary's Hospitals.

THE LADIES' PUBLIC HEALTH SOCIETY.

The annual meeting of the Ladies' Public Health Society, which is in union with the Manchester and Salford Sanitary Association, was held last week at the Manchester Town Hall under the chairmanship of the Lord Mayor. The society is now working in fourteen districts in Manchester and twelve in Salford. In Salford the salaries of seven of the lady health visitors are paid by the corporation, while five are paid by the society. The time of the visitors was taken up in visiting all the babies in their districts

under a year old, the visiting of consumptives, and the visiting of houses to see that they are kept in a sanitary condition. In addition leaflets on health subjects are distributed and sanitary powder and lime are provided, brushes for whitewashing being lent. An important experiment has been made with a view to reducing the infant mortality by providing nursing and expectant mothers with cheap dinners. The mothers paid only a penny for each dinner, which was as much as they could afford, the average wages of their husbands being only 14s. a week. During the first six months 143 children had been medically attended at the Salford centre of the Mothers' Guild. The Lord Mayor said that in Manchester all the health visitors were now paid by the corporation, and they were under the control of the medical officer of health, and he hoped that would soon be the case in Salford. The Mayor of Salford said that as far as he was concerned he would try to remedy that in Salford. The society is a good example of what can be done in the way of combining voluntary associations with municipal work.

LONDON.

TREATMENT OF SCHOOL CHILDREN.

AT the meeting of the Education Committee of the London County Council on February 9th the Day Schools Subcommittee reported further with regard to steps to be taken to secure the medical treatment of school children in districts inaccessible to hospitals. Among these districts the subcommittee included Greenwich and Woolwich, and now reported an offer by the governing body of the Miller Hospital, Greenwich, to provide treatment by x rays for fifty children suffering from ringworm for twelve months, at a charge of £55. The subcommittee recommended the acceptance of this offer. The suggested agreement with the hospital included the following clauses: "No grant shall entitle the London County Council to representation on the governing body of the hospital, nor to interference in any way with the work of the departments concerned. The payment of £55 shall be accepted by the governors in full discharge of expense incurred, including adequate payment for clinical assistants. The hours of attendance must be made to suit the convenience of the hospital."

When the arrangements for medical treatment were approved by the Council on November 30th last (BRITISH MEDICAL JOURNAL, December 4th, 1909, p. 1644), the amount of the capitation grant for the treatment of ringworm was reserved, as the cost of the x-ray method was not known at the time. Records had been kept, it was reported, at the Charing Cross and St. George's Hospitals, each hospital providing treatment for 25 cases, and the cost, apart from payments to clinical assistants, had worked out at 7s. a case at Charing Cross Hospital and 8s. 8d. a case at St. George's Hospital. The agreements with these hospitals provided that the amount of the capitation grant for the treatment of ringworm should be fixed in accordance with the result of these experiments. Each hospital had undertaken to provide treatment for 200 cases a year, and the grant to Charing Cross Hospital would be, therefore, £70, and to St. George's Hospital £87.

In a further report as to the recovery of the cost of ringworm treatment from parents, the subcommittee stated that the cost including clinical assistants varied at the different hospitals from 22s. to 15s., and on the average five attendances were necessary to effect a cure. The subcommittee thought it would be undesirable to vary the payments to the different hospitals and proposed that the lowest charge (15s.) should be accepted as the cost of ringworm treatment, and that as to the amount to be demanded from parents, 3s. per attendance for not more than five attendances should be the full charge. The procedure adopted for the recovery of these sums would be the same as that agreed upon in the case of other ailments, as reported in the BRITISH MEDICAL JOURNAL of January 1st, 1910, p. 47.

The Special Schools Subcommittee reported that an application had been received from Paddington Dispensary for the Prevention of Consumption for assistance from the London County Council in connexion with the formation of a special school for (1) children suffering from tuberculosis; (2) children predisposed to tuberculosis; and (3) children discharged from sanatoriums and convalescent homes, and being treated by the dispensary. At present 300 children between the ages of 5 and 15 attended the dispensary. The subcommittee agreed that such a school should be established as an experiment for three years. Premises known as Kensal House, Harrow Road, were recommended by the dispensary for the purpose. The house stood in its own grounds of three-quarters of an acre, abutting on the Paddington Canal. The committee of the dispensary would be responsible for the expenditure for adapting the building, and the funds for this purpose had been guaranteed for three years. The Council would only be responsible for the maintenance of the school, which would cost annually about £800, less a Government grant of nearly £500.

The Education Committee accepted the offer of the Miller Hospital with reference to the treatment of ringworm, but postponed, at the request of the subcommittee, the consideration of the proposals for the recovery of the cost of ringworm treatment from parents. The scheme for the establishment of the special school for tuberculous children was approved.

The committee debated at great length the estimates of expenditure mentioned in the BRITISH MEDICAL JOURNAL last week (p. 344). An amendment was proposed that the estimate in respect of medical treatment be increased from £4,000 to £8,000 in order that treatment of teeth might be included, but this was rejected. Dr. Beaton also drew attention to an item of £100 for the upkeep of the laboratory which is concerned with the infectious diseases of the school children, urging that £100 was utterly inadequate for such important work. The item, however, was passed.

THE COST OF MEDICAL INSPECTION AND TREATMENT.

The education estimates of the London County Council for 1910–11 issued last week include the sum of £19,075 for medical inspection and treatment; £1,000 is expected to be recovered from parents. Amongst the provisional estimates is a sum of £120 to meet the cost of the thorough cleansing, as an experiment, with soap and water of the floors of six infants' schools for six months. The cost of extending the proposal to all infants' schools would be £10,500, but if an improvement in the health of children results larger exchequer grants would be received as a set-off. A year ago Dr. Beaton drew attention to this question, urging that stricter cleanliness of schools would check epidemics. He stated that the present practice is to sweep schoolroom floors once a week and to wash them once in three weeks.

EDUCATION IN VACCINATION.

The Education Committee decided by a large majority to disregard a request by the National Vaccination League that the subject of vaccination should be excluded from the schemes of instruction in London schools. Certain books were objected to by the league, but these, in the opinion of the Books Subcommittee, were "all excellent." Some months ago, however, a diagram entitled "Small-pox Statistics" was removed from the requisition lists after the league had drawn the committee's attention to it. Further than this, the subcommittee stated, they did not propose to go.

TUBERCULOUS MILK.

The Public Health Committee of the London County Council reported on February 8th that between October 11th, 1909, and January 29th, 1910, 810 samples of milk dispatched to London railway termini from 25 English counties had been taken under the provisions of the London County Council General Powers Act, 1907. Of 676 which had been examined to date, 73 had been found to be tuberculous. Since the Act came into operation the examination of 1,930 out of 2,531 samples taken had been completed, 9.6 per cent. being proved to be tuberculous. The Council's veterinary inspector had visited 184 farms outside London, and inspected 4,455 cows; of this number 74, or 1.7 per cent., were

found to be affected with tuberculosis of the udder. In every case the dairy farmer had undertaken to sell no more milk from the affected animal.

EALING COTTAGE HOSPITAL.

At a meeting on February 7th the committee of Ealing Cottage Hospital issued authority for the signing of a contract for the building of new premises at a cost of £16,500, exclusive of the cost of land. The plans include accommodation for 38 patients, and an arrangement by which provision can be made at a later period for 20 additional beds if thought desirable. Of the sum required about two-thirds have been received. The decision now recorded represents the first definite move in a scheme which probably would meet with little favour among lay residents in Ealing were its full meaning brought home to them. Ealing Cottage Hospital originated in a provident dispensary established some forty years ago. To this in 1871 a few beds were added, and these were increased on three subsequent occasions. In its present state the institution dates from 1896. It has twenty-two beds and two cots, its in-patients number between 200 and 250, and there are some 2,500 members on the books of the dispensary. The in-patients, as a rule, pay small sums varying from 3s. 6d. to 12s. a week towards their maintenance. The total annual income is a little under £2,000, and about balances the ordinary expenditure. As a hospital, its work is done on "cottage" lines by local practitioners, with the assistance, when needed, of three consultants. A year or more ago it was suggested that the number of beds should be increased, and a request for a building grant was made to the King's Fund. The reply was to the effect that it would be forthcoming if the new hospital were conducted on the lines of a metropolitan general hospital. The condition was accepted, and at the last distribution meeting of the King's Fund a grant of £1,000 to the building fund of Ealing Cottage Hospital was approved. The conditions attaching to such a grant mean the transformation of a local institution which, under an active committee, has proved highly efficient, into one staffed entirely by London surgeons and physicians, and requiring for its upkeep a much wider opening of money-bags than the present institution has ever demanded, or is ever likely to demand. It may be desirable to rehouse the institution and somewhat increase the accommodation, and the system on which it is staffed might be slightly modified with advantage; but local conditions would not seem to justify its replacement by an institution of the ordinary general hospital type. It is open to question whether thus transformed the hospital would be of any greater service to such poor as live in Ealing than is the present one, and it is certain that those who do not belong to the really poor classes, but to the comparatively well-to-do and wealthy sections of the community, will lose by the change. The benefits of a hospital are not limited to those who are treated within its walls, but are extended to every person in its neighbourhood through its influence on local medical men, provided that a considerable proportion of these actually take part in its work. Hitherto this has been the case at Ealing, where the stimulating influence of hospital work has been a part of the daily lives of as many as twelve of its medical practitioners and three of its dental surgeons. It would seem that a year or two hence this stimulus will cease, whereas the true interests of the inhabitants of Ealing would, on the contrary, best be consulted by preservation of the present system, with possibly the extension of its benefits over a still wider area by shortening somewhat the period for which any one individual local medical practitioner can uninterruptedly hold office on the staff. If, however, the situation is to be saved, it can only be—it would seem—by lay effort. The policy of the King's Fund in encouraging enlargements of existing institutions in outlying parts is no doubt sound in a general way, but the transformation of small local hospitals into institutions of the metropolitan type is a plan only rightly applicable to suburbs almost entirely inhabited by members of the working classes, whereas the borough of Ealing is largely residential. In many provincial towns the hospital work required is done by men who rarely confine themselves solely to consulting work, and it seems foolish to deprive the medical profession in Ealing of like opportunities. After all, that neighbourhood is, in point of accessibility, not much further away from the centre of London than is, for instance, Brighton, in these days of fast trains. But what would Brighton say if it were proposed to rob its practitioners of the stimulus of hospital work by staffing the Royal Sussex Hospital by London men, merely for the sake of £1,000.

LEICESTER.

NEW NURSES' HOME.

THE last part of the building scheme in connexion with the Leicester Infirmary, which has been carried out under the auspices of Sir Edward Wood, the chairman, who has raised £100,000 to bring the institution up to a modern standard of efficiency, was completed on February 2nd, when Mrs. Fielding-Johnson, the wife of the former chairman, opened the new nurses' home which has recently been erected from designs of Messrs. Everard, Son, and Pick, of Leicester. The total cost, including furnishing, was £22,500. The building is an E-shaped structure of a plain character, built of Bagworth bricks to harmonize with the existing buildings, and faced with Ketton stone. There are four stories, the three upper being exactly similar. The basement contains box-rooms, bicycle store, coal-house, etc., and the heating chamber for the building. The ground floor, which is approached by three entrances, contains a large central hall leading to the main corridor, which gives access to a spacious recreation-room with oak floor and a raised platform at the north end. The other rooms on this floor are two probationers' sitting-rooms, sisters' sitting-room, the home matron's room, a linen store, kitchen, class-room, waiting-room, quiet room, library, five bedrooms, and lavatory accommodation. Shut off entirely from the main buildings is a small isolation block with separate entrances, containing isolation room, nurses' rooms, and separate lavatory accommodation, which will prove most serviceable in dealing with any case of infection which may arise among the nursing staff. The three upper floors each contain 31 bedrooms, as well as a large central lavatory equipped with basins, hot and cold supplies, etc.

The side wings contain on either side three bath-rooms and three waterclosets. The home faces due south. The corridor floors are of terrazzo, the sitting and bed room floors of dolomont.

The building is equipped with electric light, gas being laid on in case of emergency, and is heated throughout with low-pressure steam radiators, each bedroom and sitting room being provided with a separate fireplace. Telephonic communication has been installed between the home and the infirmary, as well as an intercommunication system on each floor of the home. The bedroom furniture is of oak, and many of the rooms have been furnished by friends at a cost of £15. The whole of the arrangements made for the comfort of the nurses met with much commendation from the large number of ladies and gentlemen present at the opening ceremony, in whose opinion the nursing staff are now housed in apartments which compare very favourably with those of most institutions.

WEST YORKSHIRE.

THE BRADFORD DIVISION OF THE BRITISH MEDICAL ASSOCIATION.

A SUPPER and smoking concert, held under the auspices of the Bradford Division of the British Medical Association at the Great Northern Victoria Hotel, Bradford, on February 1st, was attended by a large number of medical men. Dr. Metcalfe, Chairman of the Division, presided, and after supper the

Chairman, in the course of a few remarks, stated that the meeting was for pleasure, not business. The concert had been arranged to take place under the aegis of the Bradford Division of the British Medical Association—that great Association of the medical profession which existed to promote the intellectual, the material, and the social interests of its members. Social intercourse was of the greatest use in removing the asperities and suspicions which sometimes arose. The amount of musical talent amongst the medical men of Bradford is astonishingly great, and many well-known doctors contributed songs and recitations. Amongst the latter was Dr. Goyder, who contributed no less than three admirable items to the programme. After a most enjoyable evening, the proceedings came to a close at midnight.

We may note that Dr. Goyder, who, it will be remembered, was entertained lately at a complimentary dinner by the medical profession at Bradford on his eightieth birthday, has now received a congratulatory address from his colleagues on the Bradford Board of Guardians in the following terms:

To David Goyder, Esq., M.D.

We, the undersigned members of the Bradford Board of Guardians, in congratulating you upon the attainment of your eightieth birthday, desire to place upon record our high appreciation of your unfailing courtesy and kindness, your unselfish devotion to and care for the poor; and also of the enthusiastic and efficient manner in which you have discharged your many public duties, especially those as chairman of the Union Hospital Committee.

The presentation was made by the Chairman of the board, and the address was signed by all the members and by the clerk.

Special Correspondence.

PARIS.

Typhoid Fever and the Carrier Problem.—Human Sero-therapy.—Antibodies, Antitoxins, and Predisposition.

DURING the last three months a full-dress debate on the prophylaxis of typhoid fever has been going on in the Académie de Médecine. No disease has been fought in France with more enthusiasm and none with more success, but none has prevailed with more dire intensity. As an old country doctor said to me the other day, in rather grim jest, "What an excellent disease it is; for forty years I have made 2000 francs a year through it, and now science is stepping in to spoil my trade." Hitherto the principal consideration which has guided our preventive measures has been the disinfection of contaminated waters, and it must be admitted that to this we owe three fourths of the diminution in the number of cases. A new idea has recently been introduced—that of the bacillus carrier. These persons, after they have recovered from their attack of typhoid fever, continue to harbour for years, in the alimentary canal or in the urinary organs, dormant bacilli which they can pass on to others, and which in the new soil thus provided for them can again develop their mischievous activity. This discovery seems to imply the introduction of prophylactic measures so extremely difficult of application, and so extremely delicate, that without questioning their utility, I must agree with M. Delorme in believing that they should be assigned a secondary place. If precautions of this nature are to be extended to all infectious diseases, it is evident that we shall have to ostracize, or at the very least put under suspicion, nearly everybody everywhere, and that in the name of prophylaxis this planet of ours will be rendered uninhabitable.

Moreover, these excellent bacilliferous folk are not wholly mischievous. If a theory which is just beginning to rise above the horizon, but which is growing bigger and brighter as rapidly as Halley's comet, is to be accepted, then these persons, like the lance of Achilles, will turn out to be eminently capable of curing the ills they cause. This new luminary is humano-sero-therapy.

Why has this simple way of preserving mankind not been thought of before? Was it not easy enough to conceive that a patient might be cured by the simple expedient of injecting him with the serum of one of his own kind who had himself been cured? For if this other person had recovered, the reason must have been that his blood possessed or had acquired certain special qualities which enabled it to repel the infection, and, since this infection is produced by micro-organisms and their toxins that, fighting foot to foot, and opposing element to element, his blood produced antibodies and antitoxins which triumphed over the enemy. Yet it is asserted that the science of medicine is infinitely complex, and that we shall never be able to unravel the tangle of human nosology! Now, on the contrary, the utmost simplicity in action and reaction is revealed! Were I not thoroughly hardened by the daily practice of a sanguinary profession, I could weep tears of joy and admiration. The story, moreover, is even more wonderful than it seems at first sight. We might be inclined to suppose that, in order to cure a patient in whom the disease was in the acute stage of its development, half or even three-quarters of the serum of a person who had defeated the enemy would not be too much, because its antibodies and antitoxins, having had for some time nothing to do, might be expected to have sunk into a state of indolent inactivity, if, indeed, for the most part, they had not retired covered with glory to their native haunts. Not at all; of this wonder-working serum only an infinitesimal quantity is necessary, 20 to 70 c.cm. injected in divided doses for acute peritonitis (Wilkie). This is very fortunate, for it would have been deplorable had it turned out to be necessary to *saigner à blanc* a convalescent in order to cure a patient with the disease in its acute stage. These antibodies are mighty fine fellows, and Bayard, who defended the bridge of Garigliano against 200 Spaniards, was as nothing in comparison with these doughty champions of our physiological integrity.

So much then for this new science of humano sero-therapy, founded, I venture to say, not a day too soon. All the animal serums and all the organic extracts derived from the lower mammalia which have hitherto been employed in therapeutics have filled me with anxiety for the future of the human race. Now we are returning once more to the paths of logic and dignity—*Ratio cum dignitate*. Already there are on record instances of doctors who have not hesitated during an epidemic to contract an eruptive disease, to cure themselves of it, and to open their own veins in order to provide their clients with a serum always at hand and always up to standard. This, indeed, carries to its heroic acme the *haud ignara mali miseris succurrere disco* of Virgil, poet and prophet. Yet there is one point which still troubles me a little. I dread some treason in this serum, with its wonderful micro-actions, and I see clearly that the exponents of the method are themselves a little suspicious, and for the same reason. They are careful that the blood borrowed from a species so foolishly diseased as the human shall not contain in addition to the desired antitoxins poisons of some other nature which may have taken their place; they take, for instance, precautions against inoculating syphilis for the cure of a coryza. They will, I hope, permit me to point to another source of danger. In the course of nature it is not inevitable that each particular individual should fall ill of each particular disease. The theory of what we commonly call predisposition will be a vain thing if we do not give it a legitimate extension in accord with the hypothesis set out above, and assume the existence in the blood serum of pre-bodies and pre-toxins ready, if the simile may be permitted, to welcome with open arms their accomplices from the outer world. Anaphylaxis and predisposition ought to be interpreted on the same lines as immunity. All this is not very reassuring, and I can quite easily imagine that fifty years hence one of our descendants may have some tale such as this to tell: "In 1921 I caught measles; my doctor, who had foreseen what was about to happen, and had had himself inoculated a few weeks earlier, injected me with 25 c.cm. of his own serum, and within a fortnight I was cured; but in 1922 a strange thing happened. We were both attacked by typhoid fever at the same time. The serum of a hospital nurse who was convalescent from the disease saved our lives however, and we recovered after an illness lasting about sixty days. Now we are all three suffering from chronic rheumatism, and are looking out for some person who has been cured of that disorder to try and catch a fourth disease less serious than rheumatism.

So far we have not been able to find such an one." I may seem to jest, but—

Quamquam ridentem dicere verum quid vetat?

and I should be mortified were the apostles of humano-sero-therapy to take what I have written to be altogether a hostile criticism. I may poke fun at a theory which seems to me much too simple to be true, but I am always ready to accept without any explanatory hypothesis a series of convincing facts. But where in medicine can we discover the wholly convincing fact? It is the misfortune of our art, the despair of therapeutics, that we have to direct our inquiries to subjects so difficult to define, so individualized, so little comparable one with another as human organisms. In medicine hypotheses have always stood in the way of facts; our road is strewn with them, and all our generalizations are no more than smoky torches, throwing for our feet a trembling and deceptive light, which only makes the rest of our road seem the more dark.

BERLIN.

The History of the Crusade against Tuberculosis.—The Housing Question and Tuberculosis Colonies.

DURING the last few years the efforts of hygienists in Berlin and other parts of Germany have been largely centred on the combat against tuberculosis, and Professor Kayserling recently read a paper before the Gesellschaft fuer soziale Medizin, Hygiene und Medizinalstatistik in which he gave statistics as to the number of deaths from tuberculosis during the period 1883 to 1908 in Berlin, where the name of each inhabitant is registered and the cause of every death is officially certified by a physician. A decrease in the mortality followed closely on the discovery of the bacillus in 1881 by Robert Koch, who even at that early date pointed out that contagion might be prevented by disinfection of the sputum, etc. The crudest cases of transmission were henceforth avoided. Substantial progress was made in 1884 by the institution of State insurance against sickness. To the working classes in particular better medical treatment was in this way guaranteed and the opportunity was given of diagnosing the malady in its initial stages. In 1890 notification was made compulsory by a municipal regulation which has, however, been rather neglected. The most important step was taken in 1890, when colonies or sanatoriums for curable consumptives were established. By 1907 Berlin had 1,700 beds in such institutions. During the period 1889–1908 there was no decrease in mortality among males aged 15 to 20 years, while among females of the same ages there was a noticeable increase; at ages 20 to 25 the statistics show a similar result, but in women at the age-period 25 to 30 no increase is to be observed. At the age-period 35 to 40 years there was a fall from 42 to 23 per 10,000 among males, and a similar decline in the female rate. The decrease among both sexes over the age of 40 has been continuous. The increased mortality among females at the age-period 15 to 25 might, Professor Kayserling thought, be attributed to the greater calls made during recent years upon their energy by the employments in which women now engage. The decreased mortality of those past the age of 30 is probably due to the homes for consumptives, for, in addition to the treatment there given, the patients are disciplined in hygienic principles, so that on returning to their former sphere of life they continue to live in accordance with these principles; moreover, in the event of a relapse, they know how to avoid transmitting the disease to others.

The institution of these sanatoriums was, however, only the first step in the contest with tuberculosis. The improvement of dwellings, especially those of the working classes, must, Professor Kayserling thought, be regarded as equally important. Inquiry showed that 40 per cent. of consumptives lived in single-roomed apartments, and were thus brought into intimate contact with 82,000 other inhabitants of Berlin, so that it was not difficult to realize what opportunities were furnished for the propagation of the disease. It should be the function of the so called *Feversorgestellen* to procure in the first place better housing accommodation by paying a portion of the rent, and in the second to see after the proper disinfection of dwellings in which a death from consumption has occurred, or from which a patient has gone to a consumptives' home. Further, it was, he said, of the highest importance to isolate children in consumptive families. In France, such children were sent into the country to avoid infection. The next step that should be taken in Germany was to make the method of disinfection the subject of legislation. After the removal of a patient to a hospital, a thorough disinfection of the house should at once be carried out. Obviously the best means of stamping out tuberculosis would be complete segregation of the patient: but for the present such a proposal would be utopian, since it was impossible to compel a sufferer, still capable of working, to abandon his family for the rest of his life, or even to spend some years in a consumption colony in the hope of ultimately regaining his health. Notwithstanding this, the establishment of such colonies or homes would be of great practical benefit. Statistics showed that for Berlin accommodation for 750 would be ample. Last among the means of fighting tuberculosis was finding suitable hygienic work for consumptives after they left the colonies, and open-air employment would, of course, be the most satisfactory. In spite of all the advances of the last twenty or thirty years, these requirements were imperative. Until they were satisfied there could be no hope of bringing the combat against tuberculosis, the most formidable enemy of mankind, to a successful conclusion.

MOTOR CARS FOR MEDICAL MEN.

A COMPREHENSIVE INSURANCE POLICY.

THE Medical Insurance Committee (429, Strand, W.C.) is now in a position to offer, through the "Red Cross" Indemnity Association, a new form of policy for the insurance of motor cars of a very comprehensive and inclusive kind. The policy, which is called the Doctors "C.C." (complete cover) policy, instead of setting out the various benefits under numerous clauses which the insurer is to enjoy, states clearly that, with certain exceptions, the policy covers all loss or damage to his car, however caused, including mechanical breakdowns and damage whilst being cleaned. The exceptions are: The cost of maintenance; damage due to wear and tear or depreciation; road punctures, bursts, and wear and tear of tyres; and damage occasioned wilfully, or through earthquake, invasion, foreign enemy, riot, civil commotion, or military, or usurped power. The insured is indemnified against all damage directly sustained by him from loss or injury to the automobile insured, including accessories, up to the amount specified as the value of the automobile in the schedule to the policy by whatever cause such loss or injury may be occasioned. Further, the assured, and any member of his family, or a friend, who may be driving the automobile with the consent of the assured, is indemnified against any claim made by a third party, not being the driver of, or passenger in, the automobile, arising out of the use of the car, including law costs payable in connexion with such claim when incurred with the consent of the underwriters. A case suitable for carrying on the car, containing a list of authorized repairers, instructions, claim form, and a repair permit, is issued with each policy. In the event of an accident the car may be taken to any authorized repairer, who, without submitting estimates and waiting for the consent of the company, will at once commence the repairs. The assured will thus get his car back into use again at the earliest possible moment, and the underwriters agree to pay as from the second day after the arrival of the car at the works of an authorized repairer; or, in the alternative, after the receipt of an estimate, compensation at the rate of £1 a day whilst the automobile is being repaired, up to an amount not exceeding 75 per cent. of the agreed cost of the repairs. The assured must undertake to bear the first part of each loss, damage, or claim to the amount of £3 in the case of a mechanical breakdown when the automobile is more than two years old, and of £1 in respect of loss of accessories by theft. In the event of the total destruction or loss of the automobile insured the amount declared on the policy as the present value of the car will be accepted as the replacement value. There is a special clause providing that in the event of no claim being made under the policy 25 per cent. of the premium will be returned to the assured, whether the policy be renewed or not. Full particulars of the form of this doctors' "C.C." policy, and of other policies issued

by the "Red Cross" Indemnity Association can be obtained on application to Mr. Guy Elliston, Secretary and Agent, Medical Insurance Committee, 429, Strand, London, W.C. The Committee is in a position to allow a rebate of 10 per cent. off premiums on policies effected through it.

MOTOR CYCLE.

DR. CECIL E. REYNOLDS (Coldash, Newbury) writes: I have ridden about 15,000 miles on a machine made by one of the firms mentioned during this year, and although the engine is more efficient now than ever, the cycle part has been an endless source of annoyance and expense. It seems a little unkind to recommend to a medical man, to whom reliability means so much, a twin cylinder machine with automatic inlet valves, belt drive, and epicyclic two-speed gear. I have had experience of these also, and consider the combination abominable. Two machines stand out clearly at the head of the poll, namely: (1) The Phelon and Moore for sidecar and solo work; (2) the Triumph for solo work only. Let "H. K." compare the performances of these two machines with the heavy belt-driven twins in the quarterly trials of the Auto-Cycle Union, and I think his difficulty will be settled. The Phelon and Moore won the medal for the best team. It is amply powerful enough with its two-speed gear for sidecar work, and if the rider did stop on an unusually severe hill it is no hardship to drop the passenger, engage the low gear from free engine position, and go up alone. Apart from workmanship and material, the advantages are mainly (1) one cylinder only to keep in order, thus abolishing the worries of synchronization; (2) a light and simple two-speed gear; (3) lowest possible saddle position; (4) no belt troubles. This latter advantage is a host in itself. Added to this the machine is weatherproof. If "H. K." wishes further proof, let him submit ten names of machines with a number to each to the editor of a motor-cycling paper asking him to arrange the numbers in order of merit. Lastly, let him remember that if a machine does not suit him and he wishes to sell it, some makes fetch almost list price, others fetch next to nothing even if they have only been once on the road. I advise a castor-wheel sidecar, not a flexible.

THE INTERNATIONAL MEDICAL CONGRESS, 1913.

THE first move in preparation for the seventeenth International Congress of Medicine, which is to be held in London in 1913, was made last Monday, when a meeting was held in the hall of the Royal Society of Medicine for the purpose of forming a general committee and of taking such preliminary steps as should be considered advisable. At the last meeting of the National Committee, held at Budapest last summer, that body dissolved, but determined that its officers should continue their duties pending the constitution of the General Committee for the Congress in London. Dr. Pavy took the chair, and Mr. D'Arcy Power and Dr. Clive Riviere supported him as the Acting Secretaries. The Chairman, having explained the position, called upon Mr. D'Arcy Power to read a list of 360 names of those who had intimated their willingness to serve on the committee. To this number must be added those who had served on the National Committee. A few names were added to the list at the suggestion of some members present, and the General Committee was thereupon elected *en masse*. It was then resolved, on the motion of Dr. Pavy, that the office of President of the General Committee (not of the forthcoming Congress) should be filled by the President of the Royal College of Physicians for the time being, and Sir Richard Douglas Powell, on taking the chair, moved a hearty vote of thanks to Dr. Pavy for his valuable services. The vote was carried by acclamation.

At the suggestion of Mr. Pearce Gould, supported by Professor Osler and Mr. Butlin, an Advisory Board was appointed to consider nominations for the posts of President, Treasurer, and Secretary of the Congress as follows:

Sir T. Clifford Allbutt, K.C.B., F.R.S.
Sir William Allchin, M.D.
Sir Charles B. Ball, Dublin.
Sir Thomas Barlow, Bart., K.C.V.O.
H. T. Butlin, President of the Royal College of Surgeons of England.
Sir W. Watson Cheyne, Bart., C.B.
Sir William S. Church, Bart., K.C.B.
Clinton Dent, F.R.C.S.Eng.
The Director-General of the Navy (Inspector-General J. Porter, C.B.).
The Director-General of the A.M.S. (Surgeon-General W L. Gubbins, C.B., M.V.O.).
The Director-General of the Indian Medical Service (Surgeon-General A. M. Branfoot, C.I.E.).
G. A. Gibson, M.D., Edinburgh.
A. Pearce Gould, F.R.C.S.Eng.
Percy Kidd, M.D.
Sir William Macewen, Glasgow.
G. H. Makins, C.B.
Norman Moore, M.D.
Sir Malcolm Morris, K.C.V.O.
Sir Shirley Murphy.
George Newman, M.D. (Board of Education).
Arthur Newsholme, M.D. (Local Government Board).
Professor Osler, F.R.S., Oxford.
F. W. Pavy, M.D., F.R.S.
Sir Douglas Powell, Bart., President of the Royal College of Physicians, London.
D'Arcy Power, F.R.C.S., Acting Secretary, General Committee, Seventeenth International Congress of Medicine.
Seymour J. Sharkey, M.D.
Charters J. Symonds, F.R.C.S.Eng.
Sir John Tweedy, F.R.C.S.Eng.
Sir John Whitla, M.D., Belfast.

The reference to the Board was extended by instructing it to suggest the composition of the Executive Committee. The date of the Congress will be fixed after the meeting of the International Committee at the Hague in March.

The meeting was very well attended, and the General Committee contains members representing the various educational and other public bodies, including the Local Government Board and the medical services of the navy and army, as well as most of the specialities. It was a little difficult to follow and bear in mind all the names in so long a list, but the impression conveyed was that the mass of the profession, the general practitioners, are certainly not adequately represented.

Medical News.

HIS MAJESTY THE KING has graciously granted permission to Dr. George Ogilvie to accept and wear the Insignia of Knight of the Royal Order of Nossa Senhora de la Conceiçao de Villa Viçosa conferred on him by the King of Portugal.

SIR HENRY BELL LONGHURST, Surgeon-Dentist to the King, has been appointed a Commander of the Royal Victorian Order.

DR. A. T. GORDON BEVERIDGE has been appointed Police Surgeon for the City of Aberdeen, in room of Dr. Matthew Hay, who recently resigned the appointment.

Dr. W. R. PIRIE has been appointed Certifying Surgeon under the Factory and Workshop Act for the County and the City of Aberdeen, in place of Dr. Angus Fraser, resigned.

THE French Association for the Advancement of the Sciences will hold its thirty-ninth annual meeting at Toulouse in August next under the presidency of Professor Gariel. The foundation stone of a new suburban hospital will be laid on the occasion.

ON Wednesday evening, February 9th, the Battersea Borough Council, by 41 votes to 4, decided to adopt a recommendation of its Highways Committee "that steps be taken with a view to the removal of the Brown Dog drinking fountain, and its return to the donors."

THE annual meeting of the After-care Association for Poor Persons discharged from Asylums for the Insane will be held in the library of the Royal College of Physicians, London, on February 16th. Sir Richard Douglas Powell, Bart., will take the chair at 4 p.m.

LORD SANDHURST will preside at a meeting of the Indian Section of the Royal Society of Arts on Thursday, February 17th, when a paper on the Bombay housing question will be read by Mr. G. Owen Dunn, Chairman Bombay City Improvement Trust, 1904–9. The chair will be taken at 4.30.

A DISCUSSION on pericarditis with effusion, as determined by operation or *post-mortem* examination, will be opened by Dr. Samuel West at a meeting of the Medical Section of the Royal Society of Medicine to be held at 5.30 p.m. on Tuesday, February 22nd. Fellows and others wishing to take part in the discussion are requested to send their names to the honorary secretaries as soon as possible.

THE London County Council on February 8th decided to continue to require the notification of epidemic cerebro-spinal meningitis in the county of London for another year. It was stated that since the notification of cerebro-spinal fever had been compulsory in London, 317 cases had been notified, and detailed information, which might at any time become of importance, had been obtained.

Correspondence.

DUODENAL ULCER AND APPENDIX DYSPEPSIA.

SIR,—As I had read Mr. Moynihan's paper on "Appendix Dyspepsia" with much interest, and fancied that I had learnt yet one more lesson upon an old text of mine, that "neurosis" must be, so to speak, the *last ditch* of diagnosis, I felt a little discomfited to read the severe strictures upon this paper by Mr. Bowlby—strictures which could not have come from a more authoritative source. Moreover, Mr. Bowlby's opinions appealed to the apprehensions of the physician—apprehensions not without substance—lest there be nowadays some over-readiness in our surgical colleagues. So I began to vacillate in my judgement, yet was unable to expel the suspicion that Mr. Bowlby's chastisements, wholesome as they may be, might in this case have erred on the side of severity; and as I am engaged in revision of my article on Neurasthenia for our *System of Medicine*, I desire, with all respect, to compare the opposing arguments.

Mr. Bowlby's demurs are fourfold—that Mr. Moynihan's categories are vague and indefinitely comprehensive; that the series of symptoms are respectively inconsistent, or even contradictory; that in his scanty reports and short sequels the data are insufficient; and that between acute phases of appendicitis symptoms are in abeyance.

Now I will not stop to discuss the practice, now become general, of issuing preliminary papers before the author has completed the laborious and mature researches which are essential to a complete study of his subject. Mr. Moynihan, while admiring such reticence, may plead custom, even in high places, and may (if I may guess for him) regard the paper before us as an essay of this kind; and taking it in this light, may we not ask ourselves if there is not something in it—perhaps a great deal? Immature, fragmentary if you please, yet with a core of important truth. For I must say that, when thus put to me, Mr. Moynihan's views seemed to account for some obscure cases, and, indeed, for a few not obscure, in my own experience. Two especially came into my mind; both these are to the same effect, and I will ask your leave to cite one only, one in which, brief as I must be, I can give more of the data which Mr. Bowlby rightly desires.

Mrs. X. was a patient of Mr. Arthur Cooke and myself for many years. She was, when I was first consulted, a married woman approaching middle life, and presented a typical example—as we thought—of neurasthenia. At first the right kidney was a little dropped and the other viscera slackened in place. After some treatment in vain—this was before Mr. Cooke was associated with me—she was sent to the late Mr. S. Eccles for a Weir Mitchell cure. The event seemed all we could wish; the viscera were made taut again, and for eighteen months she was quite well. But then the complainings began again, and in the same vein—I need not recount them; suffice it to say she became again a weary, aching, repining woman, a trouble to herself and to all about her. Mr. Cooke had taken the case in hand, but nothing more than "neurasthenia" could be made out. Then Mr. Cooke began to importune for an exploration of her appendix. I must confess that I regarded his importunity as a surgeon's restlessness against inaction. The lady's friends objected on other grounds, but we were all infidels. At length Mr. Cooke and the patient came to terms, the operation was performed six years ago, and from that day to this the lady has been perfectly well and active, both in mind and body. The appendix was bound down by adhesion, and diseased after the fashions described by Mr. Moynihan. An old history of "peritonitis" in adolescence was recalled afterwards. The second case, I repeat, was to a similar effect. Now Mr. Bowlby will agree that a six years' sequel is no inadequate testimony; and I would point out that while this lady was at the tip-top of health—that is, after Dr. Eccles's "cure"—she was practically free from symptoms; although we cannot doubt that the appendix was at the root of the misery all the time.

But I would inquire most respectfully of Mr. Bowlby if it be an accepted canon that in the intervals of attacks of appendicitis the patients are wholly free from pain? My own impressions are otherwise; for example, I recall a fine healthy young man who had control of a large business who, even after a second mild attack of appendicitis, declined operation because the interests of his family were in his hands; he decided to run the risk. Of course we watched him anxiously, and he admitted to us from time to time unwillingly that he had frequent and not inconsiderable discomforts, especially after such food as celery, salads, etc. At length, in an easier time of business, he was delivered of a diseased appendix, with complete recovery. Thus, again, one person with a fallen kidney is unaware of it, another is rendered miserable by it—a diversity which depends upon the background of receptive instability in the individual constitution.

I am disposed to anticipate, then, partly by the analogies of other such vicious circles, that a finer discrimination of symptomatic series and an accumulation of data will prove that latent disease of the appendix may not infrequently, in persons of low resistance, set up reactions of a dyspeptic and "neurotic" kind.—I am, etc.,

Cambridge, Feb. 8th. CLIFFORD ALLBUTT.

SIR,—In the issue of the BRITISH MEDICAL JOURNAL of January 29th, 1910, Mr. Moynihan describes a series of symptoms of dyspeptic disturbances originating in the appendix and not being cured before the excision of this organ. The experiences published by this eminent surgeon are of high interest and value for me, coinciding entirely as they do (apart from small differences, as for instance the frequency of haemorrhages in Mr. Moynihan's cases) with the description of such cases which I communicated to the Berlin Congress of Surgeons[1] and the *Berliner klinische Wochenschrift*[2] as early as 1899, and later on in my book, *Klinik der Darmkrankheiten*.[3] I have given to these cases the name of "Appendicitis larvata," because the physician treating them thinks of anything but a disease originating from the appendix. Clinically all symptoms of manifest appendicitis are absent. To quote myself, I said in 1899:

> We have to do with an affection connected with quite a series of widely differing symptoms; dyspeptic complaints, stomach ache, colic, or pains in the lower part of the abdomen; disturbed intestinal digestion, secretion of mucus and blood in the faeces. Or there is vomiting (even bloody), loss of appetite, and so on. Sometimes the physician treating the case diagnosed an ulcus ventriculi.

But on careful investigation in cases which have been for years unsuccessfully treated on varying diagnoses one finds the ileo-caecum and its neighbourhood changed, thickened, inflamed, and painfully swollen. The proof of an altered appendix is best given by inflating the intestine by way of the rectum. If in such cases one has the appendix removed all complaints vanish as by magic. In the course of years I have observed quite a number of such cases in which I made the diagnosis, had the operation done, found my diagnosis confirmed, and saw a prompt cure.

As various German and American authors have since confirmed these results I did not return to the subject during the last years, believing that it was universally known and appreciated.

I have in the same communications ventilated the question—how far these results are to be attributed to the operation itself or how far suggestive moments might enter into the curative effect. Three reasons spoke against the latter assumption: (1) None of the cases, either men or women, were hysterical; they had partly got nervous by prolonged suffering, but could not be looked upon as being *ab origine* hysterical or neurasthenical persons. (2) It is an old experience that suggestive effects are never of long duration; they may be surprising, but they subside after some time and the old complaints return; in my cases the cure was permanent—in some of them ten years by now. (3) There are patients who have their appendix taken out because of typical classical attacks of appendicitis, but who besides complain of pains not originating in the processus vermiformis. With these patients appendicitis has been accompanying an inveterate disease of the stomach or the intestines, and the complaints consequently remained after the operation. This proves that in genuine cases of appendicitis larvata there is really a connexion between

[1] *Archiv für klinische Chirurgie*, Bd. lx, Heft 1.
[2] *Berliner klinische Wochenschrift*, 1899, No. 24.
[3] C. A. Ewald, *Klinik der Darmkrankheiten*, 1902, p.

cause and effect. There is no question of atypical attacks of recurring appendicitis, which are easily recognized as such, but of a symptoma morbi which at first in no way points to the appendix and its neighbourhood at all. Hence so many wrong diagnoses and the name of 'Appendicitis larvata." It is striking how small the anatomical changes in the appendix often are in comparison to the vehemence of clinical symptoms. As a confirmation of my views I venture to quote another case, observed in 1900, from my *Klinik der Verdauungskrankheiten*, it being, perhaps, of special interest to the British reader:

CASE M. D.

In May, 1900, Mrs. D., of Valparaiso, consulted me by advice of her London physician, who had for some time treated her for obstinate constipation. The complaint got much worse when the patient was pregnant; then there were attacks of vomiting with intense prostration, absolute anorexia, dry tongue, and strongly inflated abdomen, with a pulse of 130. The first attack of this kind dates five years back, when she expected her first child.

About this and the further course of the disease I best relate in the terms of her physician: "At the end of the eighth month she had severe pains in the abdomen, strong flatulence, and obstinate vomiting. Three days after labour began, and as soon as the child was born the attack stopped. A similar but graver and more prolonged attack recurred towards the end of the second gravidity, while in the meantime there were always complaints of constipation. This time the pains had a more cramp-like character, with strong peristalsis, loud gurgling of the bowels, and intense prostration. They stayed on for a week after her confinement. The patient was again constipated, and when treated with aperients was successful but twice a week. She then came to England for treatment, but none of the internal remedies, massage, or Swedish gymnastics had any success whatever. On the contrary, during this treatment there was a new attack. This time the patient was most restless and temporarily confused—speaking Spanish, for instance, to her attendants, who did not understand a word of it. No increase in temperature. The extreme constipation could only be overcome by high enemas. A famous London authority was consulted. The abdominal organs were regarded to be absolutely intact, and all the consulted physicians in England and America were of the opinion that the attacks were hysterical, and "never had anything to do with the appendix." Since a year there had been no attack, but the severe constipation had remained.

When I saw the patient I could record a slight sensibility near McBurney's point on deep pressure, and after the bowels had been well evacuated and inflated with air I felt a circumscribed resistance which I could not but attribute to the appendix. As there were no changes in the adnex organs, no hysterical stigmata, and as the patient was quite well else, I made the diagnosis of appendicitis larvata and advised operation. Half a year later the lady decided to undergo the operation in London; she had seen me again before; I had confirmed my first diagnosis, and requested the patient to go to England for operation. The appendix was found to be lengthened, and grown together by adhesions with the colon and right ovary. The appendix itself was thickened and inflamed, the surgeon saying during the operation that the patient lived with a loaded bomb in her body under constant peril of explosion. The healing process went on evenly, and the complaints never returned.

I am glad to answer by these lines Mr. Moynihan's request for further contributions to this very important theme, and to confirm in this way his most interesting statements.—I am, etc.,

Berlin, Feb. 6th. C. A. EWALD.

SIR,—Whenever a new form of surgical treatment is proposed there is usually a strong probability that that particular operation will sometimes be performed unnecessarily. We have seen this during the past ten years in connexion with the operation of gastro jejunostomy. For this reason I agree with Mr. Bowlby that there is a serious risk that the frequency of appendicular disease as a cause of dyspepsia will be greatly overrated, and I think the use of the term "appendix dyspepsia" is calculated to foster this belief, and lead the public to overlook the fact that most cases of dyspepsia are functional in origin. At the same time, that there are cases in which latent appendicular disease does cause gastric symptoms I have not a doubt. This is no new discovery; it has been recognized in America for some years, as must be known to all who have had the privilege of visiting the clinic of the Mayo brothers at Rochester. For these cases I prefer the term "appendicular gastralgia," as being more vague, and less likely to lead to the belief that the majority of cases of dyspepsia have some organic cause which is curable by operation. There is no doubt that these cases have been often unrecognized in this country, and that gastro-jejunostomy has been performed for them without benefit to the patient, and Mr. Moynihan has done a valuable service in giving us his experience on this subject. Some months ago Dr. Soltau Fenwick and myself wrote papers on this condition, which have been accepted for reading before the Royal Society of Medicine, and I trust that the discussion will lead to the wider recognition of these cases, and will result in crystallizing our knowledge as to the class of case in which operation is justifiable and likely to be of benefit.—I am, etc,

London, W., Feb. 7th. HERBERT J. PATERSON.

SIR,—The question at issue is: Does chronic appendicitis sometimes simulate chronic disease of the stomach so closely that (as Mr. Moynihan asserts) skilled observers sometimes diagnose gastric ulcer when they ought to diagnose chronic appendicitis?

We are all familiar with acute local disease of the bowel giving rise to acute gastric symptoms, which may be by far the most conspicuous symptoms in the case. In strangulated hernia, for instance, the strangulated bowel may give rise to hardly any local pain, or to a local pain which lasts a very short time. The practitioner is summoned to see the patient not because he has pain or a hernia, but because he is vomiting.

Again, enteric fever—a disease characterized by local lesions far down in the small intestine—may begin with vomiting. I observed a case a few weeks ago in which, in an otherwise mild case, the vomiting lasted a week, during which time the patient retained practically nothing but water, but he had no abdominal pain whatever, and no tenderness on palpation. Again, in another mild but protracted case the disease began with vomiting and anorexia, but the patient never had any abdominal pain, except, at the beginning, a little tenderness on palpation in the epigastrium.

No one would contend that acute lesions of the bowel, far removed from the stomach, always cause acute vomiting; still less would any one believe that acute vomiting is always due to an acute lesion remote from the stomach. Similarly with chronic lesion. Mr. Moynihan, as I understand, does not assert that all chronic dyspepsia is chronic appendicitis, or that chronic appendicitis usually causes chronic dyspepsia. No one would believe him if he said that. At the same time there is absolutely no prima facie reason for refusing to believe that chronic localized bowel disease may sometimes produce chronic gastric symptoms. I am convinced that chronic gastric symptoms are sometimes thus produced, and I am sure that readers of the JOURNAL could easily produce an overwhelming number of instances. Two cases will serve for illustration:

1. A woman, aged 54, previously robust and healthy, began to suffer from attacks of acute gastric pain sometimes accompanied by violent vomiting. The attacks followed very slight indiscretions in diet, and after some of the worst attacks it was weeks before she was able to take even liquid nourishment in adequate amount. On one occasion she had melaena apparently to a considerable extent. The pain was always in the upper part of the abdomen and usually on the left side. This continued for eighteen months. She visited various health resorts. She saw several doctors including an eminent London physician, and all of them decided that she had a gastric ulcer, possibly malignant, but most likely not. Then the symptoms changed. From being gastric, they became obviously intestinal. Signs of obstruction came on, and these were found to be due to an annular carcinoma of very small size constricting the small intestine a few inches above the ileo-caecal valve. The surgeon who operated informed me that he frequently saw patients with bowel cancer whose symptoms at first suggested gastric disease.

2. A female servant, aged 35, had been attending the out-patient department of a London hospital for "gastric ulcer." She was constipated and anaemic, and had severe pain usually accompanied by vomiting after all solid food. She was tender on palpation under the left costal margin, and there was an area of cutaneous hyperaesthesia on the left of the middle line between the xiphoid cartilage and the umbilicus. On being put to bed, and treated as for gastric ulcer, she improved to the extent of being able to take selected articles of solid food without discomfort. A few months later she had a very slight attack of pain in the right iliac fossa. Six months later still I saw her on her return from a holiday in a well-marked attack of appendicitis, and she said she had had two similar but slighter attacks within the preceding month. Appendicectomy was performed, and since then (seven or eight months) she has been able to eat anything she fancies with absolute impunity.

The diagnosis of the true cause of the chronic gastric symptoms in these cases is undoubtedly difficult. The

first essential is of course a knowledge that such cases exist. An imperfect response to remedies known usually to afford temporary relief in cases of gastric ulcer may lead one to suspect that the gastric symptoms are secondary to a remote cause. The two cases mentioned above were more amenable to treatment than hysterical cases usually are.—I am, etc.,

London, W., Feb. 5th. G. G. DAVIDSON.

SIR,—I read with great interest Mr. Moynihan's paper on appendix dyspepsia, in the BRITISH MEDICAL JOURNAL of January 29th, as it at once recalled to my mind an interesting case which was under my care during 1908 and 1909.

The patient, a young lady aged 23, whilst away from home early in 1908, presented symptoms of acute gastric ulcer; the usual treatment was adopted, and the patient removed home at the earliest opportunity when she came under my care. There was a history of dyspepsia and constipation of some years' standing. On seeing the case I agreed as to the diagnosis. Under treatment the patient improved, the improvement alternating with a series of relapses. Vomiting was a constant symptom, relieving the pain, which was always referred to the epigastrium.

On two or three occasions a slight attack of haematemesis occurred, amounting to about a teacupful each time. Twice whilst under my observation she developed a very mild attack of apparently subacute appendicitis; with these two exceptions the pain, as before mentioned, was always referred to the epigastrium.

The chief points in the case were briefly these: Epigastric pain increased by food and relieved by vomiting half an hour after the meal; obstinate constipation was a marked feature throughout the case. As time went on the loss of flesh was pronounced. At no time could gastric dilatation or a palpable pyloric thickening or tumour be made out.

After a relapse in July, 1909, the patient consented to see a consulting physician, who confirmed the diagnosis of gastric ulcer, and agreed with me for operative procedure. In early August, 1909, a laparotomy was performed (not by Mr. Moynihan), when the stomach and duodenum, much to the astonishment of the operating surgeon and myself, presented no evidence of disease recent or ancient. Recalling the attacks of subacute appendicitis, it immediately struck one that whilst in the abdomen it might be well to have a peep at the appendix, which was found to have a distinct "kink" near its centre; it had no adhesions, but looked slightly turgid. It was removed. The patient made an uninterrupted recovery, with immediate cessation of the whole of the symptoms; the obstinate constipation became amenable to treatment, and the bowels now move naturally. She has put on weight, looks well, is well, and enjoys life. After a long and tedious illness, defying all medicinal treatment, the relief experienced since the appendectomy astounded me.

Until reading Mr. Moynihan's paper I had neither heard nor read of a similar case; but still, I have no doubt that other medical men will recall a similar experience.—I am, etc,

Kirbymoorside, Feb. 7th. T. WALSH TETLEY.

SIR,—I should be glad to be allowed to correct an error which has crept into the necessarily very compressed summary of my remarks made at the conclusion of the debate at the Royal Society of Medicine on Duodenal Ulcer.[1] I am reported to have said: "The cases published by Dr. Hort as a contribution to the discussion were in his opinion not cases of duodenal ulcer at all, but probably of appendicitis."

The argument I raised was, that before saying that the surgical treatment of duodenal ulcer had failed in any given case we must be quite sure that there had been a definite structural lesion in the duodenum at the time of operation. In Dr. Hort's cases an ulcer was seen in all. In other cases the diagnosis made before operation had been accepted in spite of the visible integrity of the duodenum, and gastro-enterostomy, then performed, had proved disastrous. In these latter cases I suggested that the appendix was perhaps at fault, and I urged the recognition of the condition of "appendix dyspepsia." I pointed out that gastro-enterostomy for duodenal ulcer was one of the most successful operations in surgery, judged by its immediate and remote results, but that the results of gastro-enterostomy for gall stones were bad, and those for appendicitis were worse. This criticism did not apply, and cannot of course apply, to the five cases of Dr. Hort. I am so deeply sensible of the enthusiasm and ability which Dr. Hort is devoting to the elucidation of many of the problems connected with gastric and duodenal ulceration that I should be very loth to appear in any degree as a hostile critic of his work.

I am well content to find that my writings seem not infrequently to act as an intellectual provocation to those who are good enough to read them. But if happily I might choose, I should prefer the response to such excitation to be expressed rather in reflection and renewed inquiry than in hasty denials or ill-informed judgements.

It came to me as a great surprise to find my paper on "Appendix Dyspepsia" the object of a merely destructive criticism from so distinguished a surgeon as Mr. Bowlby. I could not lightly pass over any comment of his, yet the opening and the final sentences of his letter in your issue of February 5th, page 349, indicate quite plainly that the condition I have described has met with no smallest recognition from him. The thoughts which my paper embodies are new to him; they are instantly met in a spirit, not of inquiry, but of denial. I am sorry this should be so, for it is evident that Mr. Bowlby and I are not yet equally equipped for a profitable discussion of this large, intricate, and important subject. One point only in Mr. Bowlby's letter needs reply. He writes, "It is common knowledge that one of the most notable clinical features of most cases of real appendicitis is the complete remission of all symptoms between the attacks," etc. Now a great many cases of "real appendicitis" pass unrecognized, as I have endeavoured to show; but I am prepared to admit the truth of Mr. Bowlby's contention in respect of a certain proportion of them. Why, then, are symptoms in some cases persistent and in others absent except during an acute attack? My present experience leads me to believe that if an obstruction exists in the appendix there will be an almost constant complaint of some of the symptoms to which I have drawn attention; if the lumen of the appendix is free there is complete quietude between acute attacks. But with the great opportunities Mr. Bowlby possesses for research into the question, he will, I think, not be long in recognizing, if, with an open mind, he will start a critical inquiry, that there is much truth in the matter I have laid before your readers. Then I hope that he and I may have the chance to debate the subject in all its details, and to have a happy little laugh together over his letter of to-day.—I am, etc.,

Leeds, Feb. 5th. B. G. A. MOYNIHAN.

OPERATIVE TREATMENT FOR HAEMORRHOIDS.

There are forty different ways
Of transcribing tribal lays,
And every single one of them is right.

SIR,—These words of Kipling's may well be applied to the various operations for haemorrhoids. It is easy but it is wrong, and worse still it is most foolish, to say any operation is a bad one on account of the failures which may come to one's notice. What operation could not be so condemned? I can give any number of details of bad results after ligature, but this does not condemn the operation, which is a good one.

It also seems easy, but it must be both wrong and foolish, for any one to decry an operation concerning which he has had little or no personal experience, and apparently for the simple reason that he will not gain it. This seems to be the state of the case with respect to both Mr. Harrison Cripps and Mr. Lockhart Mummery, who have recently written against the radical cure for haemorrhoids.

In the BRITISH MEDICAL JOURNAL for January 1st, Mr. W. S. Richardson says—quoting the excellent paper of Mr. H. Graeme Anderson, my late house surgeon—that only one-third of the cases of haemorrhoids at St. Mark's Hospital are treated radically. This is accounted for by the fact that until Mr. Gordon Watson recently came on the staff, I was the only one at St. Marks who ever did a radical operation for haemorrhoids, with the exception of one or two of my house-surgeons, who learnt the operation from me.

During the last fourteen years I have done this operation many hundreds of times, and without wishing to

[1] BRITISH MEDICAL JOURNAL, January 22nd, p. 204.

appear too conceited as to my powers of perception, I do not believe I should have persisted in it if it were such a failure as Messrs. Cripps and Mummery are anxious to make it appear.

One of these writers has had many long years of experience in rectal surgery, and the other will, I hope, get it in time, but I have never seen so many wrong statements made about a simple operation from want of experience of it. Mr. Mummery says: "Any operation for piles is radical which removes the piles, and it is not necessarily an advantage to remove the whole of the mucous membrane lining the anal canal, and incidentally the sensitive area of the rectal orifice."

The first statement hardly needs any comment, as it is so obviously wrong. No operation can be called radical which leaves behind it the very essentials for a recurrence.

The second statement is one which I have long wanted to clear up. Mr. Mummery has frequently made this statement with regard to the results of the operation in question; and yet, if he will look at others of his writings, which I always read with the greatest interest, he will see that he has described operations performed by himself in cases of rectal carcinoma, in which he has brought the bowel down many inches and attached it to the anus, with the result which he with natural pride tells us is in every way perfect with regard to control, etc. I do not think further comment on this is required!

Mr. Cripps's statement that he regards Whitehead's operation for piles as "the worst operation that has ever been introduced for the cure of this common malady," is a statement which I venture to think should never have been made by a surgeon of Mr. Cripps's standing until he has thoroughly gone into all the reasons for performing such an operation and conferred with those who have had experience in it. I know I am stating a fact when I say that there is only one recorded instance of this operation having been performed at St. Bartholomew's, and this on investigation is found to be wrong, as it was a combination of ligature and cautery. Mr. Cripps considers the operation as unnecessarily severe for the class of haemorrhoids met with in the *South* of England! The suggestion is, then, that haemorrhoids in the North of England are presumably of a much more serious type. What they would be in the Hebrides at this supposed progressive rate I shudder to think!

The concluding remarks of Mr. Cripps have to do with what I now propose to say concerning this operation.

That the radical operation for haemorrhoids is the best surgical procedure for this complaint is a statement which I think will be agreed to by all unbiassed surgeons, who will regard the operation with an evenly balanced mind and a proper desire for surgical progress.

I have purposely left out the name of Mr. Whitehead in discussing this radical operation because, with every desire to give the credit due to him as a pioneer, I do not think it is fair that his name should be tacked on to any operation of this character which is a failure owing either to unskilful surgery, indifferent nursing, or both.

When a person is contemplating being operated on for haemorrhoids the first question he asks is, Will these things come again? If a properly conducted radical operation is performed a promise of no recurrence can safely be made, and this cannot be said of any other existing operation.

The very essence of the operation is that a complete ring *should* be removed, including the anal mucous membrane and its subjacent areolar tissue, with the intermediate plexus of veins lying between the sphincters—a most important detail.

I do not propose to go further into the technique of this operation; it has been described often and extremely well, but I would like to mention here Mr. Heygate Vernon's method, which I propose to try at St. Mark's, and after I have done 50 cases I will publish the results.

However well the operation is conducted the ultimate result will be made or marred by the nursing. Unless these cases are scrupulously nursed justice will not be done to the operator or to the patient. There is no doubt that bad, indifferent, or insufficient nursing is the main cause of many shortcomings in these cases. I should like to pay a tribute to the nursing at the Grosvenor Hospital for Women and Children, where I have operated on a large number of these cases, and in not one single instance has there ever been any setback of any sort or kind.

Good nursing is the keynote of success in all rectal surgery, and this is particularly the case in this operation for haemorrhoids, which, when properly performed and properly nursed, is not only a radical cure for haemorrhoids, but an almost equally radical preventive of abscess and fistula.—I am, etc.,

London, W., Feb. 3rd. F. C. WALLIS.

GENERAL PRACTITIONERS AND POOR LAW REFORM.

SIR,—No one can read your admirable article in the JOURNAL of January 22nd and the report of the Special Committee in the SUPPLEMENT for February 5th without realizing how profoundly legislation carried out in accordance with either of the reports of the Commissioners must affect medical practices in general and general practitioners in particular. And although it has apparently often been assumed that Poor Law medical officers will be most affected, I feel sure that such is not the case. The suggested reforms will be felt in the practice of all, from the sixpenny doctor to the specialist.

The increase of specialism and of preventive medicine of all sorts, the great advance of surgery, the greater number of official appointments, all subtract from the work of the general practitioner. The improvement in treatment which is so much to the advantage of the patient has no corresponding pecuniary recompense to the ordinary medical man, so also all the social reforms of the past have depended for their success upon the benevolence of the profession; for instance, the working of the Midwives Act, the treatment of school children, the notification of births, the conduct of district nursing—each and all rely upon the help of medical men, while offering them little, if any, compensation; and now it is quite evident that not only those who are called paupers but very many others will sooner or later, in one way or another, receive their medical attendance through the State. That enormous class of patient who attend dispensaries and the out-patient departments of our hospitals, school children found on inspection to be defective, sufferers from infectious diseases, consumptives—all these, and many more, if they are to be attended by various State-paid officials, will leave but few for the general practitioner.

We are told that it would not be fair to take away the Poor Law medical officer's work. With that, I think, we all agree, and I see no cause for it. But would it not be equally unfair to take work from the general practitioners and throw it on to the Poor Law medical officers? In this way a double injury would be done to the profession, for while the one would be deprived of more or less profitable work, that work would have to be done by the other, we may be sure without proportional recompense. Unless a much larger class of patients than has been suggested is to be attended by the Poor Law medical officers, it would be impossible to have whole-time officials in any but large and thickly-populated districts, because, to see the numbers that would be worth while making the appointment a whole-time appointment, a doctor would have to traverse an enormous district and there would of necessity be a great and unnecessary overlapping of official and other practice.

But assuming it to be possible, is it what we want?

It is our aim as a profession to be as free as possible from any sort of outside control—this, both in the interests of our patients and ourselves. The life and individuality, diligence and efficiency of free competition are surely more in the interests of science and our patients than the blighting and enervating influence of officialdom. Again, we want as medical men to take part in the councils of the authorities that control and organize medical relief; if we are all to be officials this will be impossible. It is certain that lay public authorities are not by any means the best to make medical appointments or to control promotion; they never do or will understand that special and superior skill and knowledge must be well paid for, and that a medical man is not a mere machine.

What do we as medical practitioners want? What do the public expect of us?

We want, as already said, such freedom of action as is compatible with carrying out our duties properly.

We want time, plenty of work to do, but not so much that we cannot give proper time and thought to the examination and treatment of our cases.

We want opportunity to make sure as far as possible that our treatment is given a proper chance, that our patients are fed, nursed, and housed properly.

The public want to be sure that if they provide these things and pay a fair wage we shall give our patients the best possible attention, cure them, and restore them to work again. Many go to out-patient departments of hospitals because they cannot or do not want to pay; but a considerable number go because they are dissatisfied with the treatment they have received, and they are dissatisfied because the attendance was not in their opinion good, and if it was not good the reason, we may be almost sure, was that their doctor was perforce too hurried or was demoralized by the conditions of his work.

Now, Sir, if we have a well organized and generally adopted Public Medical Service on some such lines as has been suggested by the British Medical Association, we shall have an opportunity of meeting many of these difficulties.

This service will be practically a great club, but essentially different from contract practice as we have known it in the past, for it will be under our own control. Remuneration will be what we ourselves consider fair, and there will be a definite wage limit, and so it will be free of the cardinal objections to contract practice as it now exists.

If we can have such a service ready and in order, the question of medical attendance on paupers becomes fairly simple; for all that we should have to do would be take them as ordinary members, their fees being paid by the destitution authority; provided the wage limit be observed it is immaterial to us whether those fees are paid by the State or by the patients themselves. This arrangement should certainly be agreeable to those who wish to remove the taint of pauperism from all medical assistance. It should be agreeable to the practitioner if he does not object to the new form of contract practice, because he will be receiving payment in proportion to the number of patients he is liable to attend; in the case of a whole-time or part-time salary this is not necessarily by any means the case—the salary, once fixed, is with difficulty increased, however much the work may increase. In this way every private practitioner may become practically a district medical officer. I do not think the existing medical officer need object, for it should not be difficult to devise a temporising arrangement by which the paupers in his district should not have free choice of doctor, but should have their names put on the list of the medical officer for such time as he would otherwise have held the appointment. If there were any deficiency between these fees and his previous salary it should be made good by the destitution authority.

Some of the commissioners have objected to this scheme that inspection would not be possible. Of course, no medical man would tolerate anything like inspection of his treatment, so that I assume what is meant is merely the entry in a book of visits made, disease, etc., and the examination of this book by some lay official. If that is all, it might be done, and better done, by adopting the plan of the benefit societies—each sick member has a sheet, on which the doctor notes the illness and the dates of his visits. This sheet is inspected by a sick visitor and sent in to the secretary of the lodge at stated times. Such a plan would provide for quite as much inspection as any lay body could require. But is inspection so necessary? Guardians subscribe to hospitals, and they make no sort of inspection of the work done there on their behalf.

Another objection is that, if patients have free choice of doctor, "the poor patient will tend to choose the doctor who interferes least with his habits, and whom he finds most sympathetic in ordering 'medical extras.'"

If this means anything, it means that the medical officer ought to be a sort of hygienic drill sergeant; in theory he might be useful, but in practice we know full well that his influence for good would be but small unless his instructions were toned down with that human sympathy with the habits, the thoughts, the surroundings, and the needs of the patient which is so essential to successful treatment. The suggestion that medical men will go beyond this and pander to the vicious habits of their patients for the sake of popularity is almost contemptible. Neither is the argument good, because the man who succeeds best in practice, is most sought after and has most influence, is he who combines firmness with his skill and sympathy.

We as an Association have now before us a rare opportunity, if we fail to grasp it we shall not again be able to catch it. Let us make up our minds, carefully but not too leisurely, and then work without ceasing until we get what we want.

I have only referred to domiciliary attendance; there is, however, much for the consideration of all practitioners in the proposed arrangement for institutional treatment.—I am, etc.,

Bradford-on-Avon, Feb. 6th. CHAS. E. S. FLEMMING.

SIR,—The assurance given in your issue of last week by Dr. Belilios and Dr. Crookshank that the circular to medical officers of health "has not been issued in any spirit of hostility to the British Medical Association" is doubly welcome, because it was not altogether unnecessary after some previous letters that have appeared, and also because many members would certainly have dissociated themselves from any party that hinted at secession from the Association.

In your leading article of January 22nd you presented in a perfectly fair way the arguments that undoubtedly weighed with the Representative Meeting in passing Minute 234. But during the last few months a somewhat ominous movement has been pressed forward by Mrs. Sidney Webb, supported by several whole-time medical officers of health writing in your columns, in favour of whole-time appointments for all medical officers under a future public medical service. The question is no longer one that only affects part-time medical officers of health; it equally affects district medical officers; and your leader came as a very timely reminder that it most seriously affects general practitioners. The seriousness of the movement will be seen from the fact that, if it succeeded, in the future no general practitioners would have any public appointment of any kind whatever, either under the Poor Law or the sanitary service or under any public medical service that supplants the Poor Law service or combines it with the sanitary service. Both medical inspection and medical treatment of school children would be put into the hands of whole-time officials, thus defeating the Watford and Harrow resolution (Minute 40) about medical treatment of school children.[1] Not only so, but it is practically certain that the scope of the proposed public medical service would be much wider than anything now existing. Paupers would be, as at present, treated at the public cost, but, in addition, a large class of persons above the stage of pauperism who cannot afford to provide for themselves everything that an advanced scientific service deems necessary, would be treated by the public authority, and, even though measures were afterwards taken to recover the whole or part of the cost of such treatment, the actual treatment would be undertaken by the whole-time medical officers of the public authority. Moreover, if, as is likely, a Sickness and Invalidity Insurance Act is passed, the same will apply, as probably the authority that controls the public medical service will

[1] That, under existing conditions, the most satisfactory provision for the treatment of school children, found upon inspection to be defective, is by placing them under the care of private practitioners. In order to do this, the method of procedure should be as follows:

The medical inspector should report each case to the Education Committee, stating in writing all the defects found.

The Education Committee should notify the parent or guardian that the defects must at once be attended to.

When the parent or guardian shows that he is unable to pay the fees required, the Education Committee should give a voucher for the payment of the fees on a fixed scale (after the manner in which payments are made for soldiers on furlough in districts where there is no available officer of the Royal Army Medical Corps).

When application for treatment is made, this voucher should be handed to the practitioner along with the medical inspector's report.

A free choice should be left to the parent or guardian to select for himself the practitioner to carry out the treatment; but it should be distinctly enacted that charitable institutions should not be made use of in this connexion.

be responsible for the working of the Act, so far as it is not worked through the great friendly societies. Thus, many patients who are now private paying patients would be handed over to the proposed whole-time public medical officers.

In short, we are faced with a movement that would deprive general practitioners of all State appointments, and at the same time take away a goodly proportion of their present paying patients, handing them over to the whole-time officers. We are threatened with a reign of officialism and a serious contraction of the field of private practice.

It has been argued that such a State service would require a large number of medical officers, that the withdrawal of these from private practice would leave fewer competitors and a higher class of practice for those who continued in private practice, while the whole-time officers would be certain of an adequate salary, and perhaps, as Mrs. Webb suggests, a county motor car thrown in. The seductive fallaciousness of this argument reminds one of the spider and the fly. As to the salaries, judging from the difficulty there has been in obtaining £250 as the minimum for medical inspectors of school children, it is highly improbable that more than this would ever be obtained for ordinary whole-time clinical medical officers.

Again, the number of whole-timers would never need to equal the present number of part-timers; and, further, the whole number of State medical officers would in any case only be a small fraction of the total number of general practitioners. The effect of this may be seen by an example. In the four unions of Manchester and Salford there are now just over thirty part-time district medical officers and over 600 practitioners in all. But even with the increased work that would be undertaken by any future public medical service, about twenty whole-time medical officers could efficiently do the whole work. It may be presumed that very few of the present district medical officers would give up their private practice for a salary anything like £250. The new appointments would be mostly taken up by young newly qualified men, but in any case the withdrawal from the 600 practitioners of twenty competitors would not relieve private competition to any appreciable extent. But it is not true that the twenty would no longer be competitors. They would really be competitors of a far stronger kind, backed up by the State and with the most costly appliances that the State could provide. They would have, as State patients, many of the persons to be insured under the Sickness and Invalidity Insurance scheme and numerous others who now pay private practitioners. Thus, while the relief of private competition would be too little to be noticeable there would be a far more serious State competition and the loss of paying patients would be most serious. In face of this, all the glamour of Mrs. Webb's "pretty picture" vanishes into thin air.

Looked at from a public standpoint, we have quite enough officialism as it is, and the cost of the scheme would be practically prohibitive. Twenty whole-time medical officers at only £250 a year would cost Manchester and Salford over £1,000 a year more than the present cost. To talk of salaries of £500 is preposterous. The ratepayers could not stand it. Twenty medical officers at £500 would mean an increased cost of over £6,000 a year in medical salaries alone, and this does not take into account the large sums to be paid for compensation to district medical officers who refused to give up their private practice and who, in spite of their excellent work in the past, would thereupon be deprived of their present appointments. Few medical men of experience would take the posts for any salary that the rates would afford, and to hand over the poorer classes to young and inexperienced men, who might be satisfied with the salaries for a time, would be a public scandal. That any new service will be more costly than the present may perhaps be inevitable, but it is by no means necessary to choose the most costly service of all, which would inflict the greatest injustice on the large body of general practitioners, with no proved advantage to the public.

I am not unmindful of the fact that Minute 234 does not affect any existing medical officer of health; it has only regard to future vacancies caused by death or voluntary resignation. Nevertheless, the principle of advocating all whole-time appointments remains the essential part of the Minute, and it is this to which objection is raised, especially as applied to a public medical service. I see no reason why most of the new work that may be undertaken by a future public medical service should not be distributed among general practitioners in some way analogous to what the Watford and Harrow resolution proposes for the medical treatment of school children. This could be done quite well, without the least interference with the vested rights of existing medical officers under the Poor Law or sanitary service, and some proposal of this kind will certainly come up for the consideration of the next Representative Meeting —I am, etc.,

Salford, Feb. 7th. J. H. TAYLOR.

SIR,—I am sorry to see that Dr. Whitby altogether misunderstands the views of Poor Law medical officers. In my letter of January 29th, to which he refers, the objection to Poor Law medical work being distributed among all practitioners generally applied only to a medical service dealing with a strictly limited class, not a public service for all "poor" persons. I quite agree with Dr. Whitby that under such a service "hundreds" of deserving practitioners would be ruined, and I hope he will assist us in striving to prevent such a calamity. I can assure him there has never been a proposal that Poor Law medical officers should monopolize such a service, which according to the recommendations of the Minority Commissioners can only come into existence after the "break-up of the Poor Law"—that is, after a Poor Law medical service has ceased to exist. Our Association has published a resolution in favour of a distinct Poor Law medical service, as at present, but better co-ordinated with the sanitary medical service. Dr. Whitby evidently recognizes the danger of a public medical service on the lines of the Minority Report, and I hope he will therefore join with all general practitioners, whether Poor Law medical officers, part-time medical officers of health, or holders of any other public offices which do not remove them from the bulk of the practising profession of the country, in opposing such a public medical service—in our opinion, not good for the public and ruinous to our common profession.

Before concluding, I should like to refer to a portion of Dr. Larking's letter on "Part-Time Medical Officers of Health." I do not agree with his conclusions generally, although he has no doubt clearly denoted some objections to the system he condemns; but when he speaks of such officers as "school medical officers"—and by that description I understand officers who are to undertake the treatment of school children—as being "for the benefit of the profession at large," I am lost in astonishment. Whether the public are gainers by such appointments I consider very debatable, but I should have thought there could be no doubt as to the injury likely to accrue to the general practitioner. That a few medical practitioners should get moderately well-paid posts may be good for them, but the profession would pay dearly for it by being deprived of a considerable portion of practice that has hitherto been in their hands, and that at a time when their legitimate emoluments are encroached upon and threatened from every side.—I am, etc.,

MAJOR GREENWOOD,
Honorary Secretary, Poor Law Medical Officers' Association of England and Wales.

London, E.C., Feb. 5th.

SIR,—As a practitioner having a fair amount of working class and contract practice, I heartily endorse Dr. Whitby's remarks in the JOURNAL of February 5th, p. 351.

Dr. Greenwood's opinions simply reflect the interests of the association he represents, which are far from being identical with those of the non-official general practitioner. If a State medical service were to be instituted and the proposals advocated by him carried out, there is no doubt that many practitioners in working class districts would suffer total extinction. Those of us who hold appointments from friendly societies, clubs, etc., would probably find that these organizations had no longer need for our services, and we would be in the pleasant position of being obliged to hand over our former patients to the erstwhile Poor Law medical officers.

It behoves all of us so situated, to strenuously resist, through the Divisions, any such proposals, and take steps

to ensure that the work of the proposed service will be open to all.

As regards vaccination, despite Dr. Greenwood's contentions, I feel sure that the great majority of medical men regard the present system as inequitable and absurd.—I am, etc.,

London, N.E., Feb. 7th. ANDREW T. SWAN, M.B.

PART-TIME MEDICAL OFFICERS OF HEALTH.

SIR,—We welcome Dr. Larking's letter, for it so openly reveals the spirit which actuates much of the opposition to part-time medical officers of health that our Association will be much strengthened thereby. Dr. Larking appeals to prejudice, and prejudice alone; but such prejudice could be as easily evoked against the four part-time appointments which he, though not a medical officer of health, at present holds. We ask all practitioners to divest their minds of the notions adverse to part-time medical officers of health, which, though totally unsupported by evidence, have, through much vain repetition, obtained some credence.

Some men will always be tactless and others touchy; we doubt not that, if ever "part timers" do disappear, your columns will be filled with complaints about "jacks-in-office" and "petty bureaucrats." Probably it will be then suggested that, not only should every practitioner be a Poor Law officer and public vaccinator, but a medical officer of health as well.

Are we really to believe, with Dr. Larking, that men in good practice sell their souls to a sanitary authority for twenty pounds a year, while whole-timers on two or three hundred will be gloriously independent of the local councillors who fix their salaries? Many local authorities can no more afford adequate salaries to whole-time medical officers than they can to whole-time surveyors and clerks; and the combination of districts is neither so facile nor so desirable as many who have no practical knowledge of local government seem to think.

There are a few hard facts which should be remembered: Part-time medical officers of health are to whole-timers at present as 4 to 1, and make up 7 per cent. of the general practitioners of Great Britain.

The question sent last year to the Divisions covered far less ground than Minute 234, and was accompanied by a memorandum wrong on at least one important point of law. Of the 206 Divisions referred to only 96 replied, and of these only 46 "approved the whole-time principle without reservation."

The total number present at the forty-six divisional meetings can hardly have been more than 400. How many of these 400 realized that Minute 234 was going to be based, as "a declaration of policy," on their expression of opinion on a matter of abstract principle?—We are, etc,

D. A. BELILIOS,
F. G. CROOKSHANK,
London, S.W., February 7th. Acting Secretaries to the Association of Medical Officers of Health.

SIR,—I can endorse every word of Dr. Larking's letter. When this matter came before our Division at Croydon I went there prepared to speak very strongly on the subject, but there was no necessity, as every member seemed equally alive to the undesirability of employing part-time medical officers of health. No doubt in these populated districts on the outskirts of London the disadvantages of the system are more apparent than they would be in more sparsely populated districts, and a good deal also depends on the type of man who holds the appointment.

If it be in the hands of a medical man who associates himself with cheap contract work and who commands neither the confidence or respect of his fellow practitioners, a most undesirable state of affairs must result. When in addition this appointment carries with it the local inspectorship of midwives, it is easy to see that, without exaggeration, a condition prejudicial alike to our profession and to the general public may be created.

The British Medical Association has given its unqualified verdict that the part-time medical officer of health is no longer desirable, and in doing so it has acted in the best interests of all.—I am, etc.,

GEORGE A. CLARKSON, F.R.C.S.Eng.
Caterham-on-the-Hill, Feb. 7th.

SIR,—Dr. Larking in his letter finished up a number of wholesale assertions by saying that part-time medical officers of health were out of date, but gave no evidence in support of his dictum. If we are to judge by his letter a good many other things are out of date, such as justice, doing as one would be done by, and a few little trifles of that kind. These unconsidered trifles are clearly beside this mark (in Dr. Larking's economy), and the real consideration is that "the more whole-time medical officers of health there are the less remain to become general practitioners." Question!

There are some 1,100 part-timers, and if all of them leave their miserable £15 or £20 a year to make way for whole-timers, and continue to exist as general practitioners, as they must, is it not evident that they will have infinitely more time and opportunity when relieved of their appointments to make up "the miserable £15 or £20 a year" by more strenuous competition with their fellows; and how many whole-timers will be created in place of the 1,100 part-timers?—say, ten or twenty. But does any one suppose they will be drawn from the ranks of the general practitioners? They will be recently-qualified men who will not become assistants because, although the pay is better, the work is hard and the outlook harder, as practices get scarcer and part-time appointments are open to seizure. They will drift into whole-time appointments at £150 to £250 per annum, and there they can stop, knowing full well that if they dare to move there will be dozens ready to snap their position at less remuneration.

Dr. Larking says a part time medical officer of health is neither good for himself, the public, nor his fellow-practitioners. I should have unhesitatingly repudiated the accuracy of these sweeping assertions, and only refrain because Dr. Larking appears to have been a part-time medical officer, and is evidently speaking from his personal experience.

His anecdote about the man threatening him is very amusing; but if he inspected any man's premises with the same want of consideration for other persons' rights, views, opinions, and feelings as he shows towards part-time officers, the wonder is, not that he was threatened, but that he escaped with a whole skin. Even then, *mirabile dictu*, and most illuminating of the low ebb to which private practice has come, he appears to wish that he could secure the gentleman who threatened his olfactory organ with violence as a private patient.

In what least particular has a part-timer to "trim his sails" towards his council more than a whole timer? Not nearly so much, for while the part-timer has only a small portion of his income at stake, the whole-timer has his all. Given men of equal rectitude in the two posts, which has the greater temptation to be frightened of vexing his council? Unquestionably the whole-timer.

Dr. Larking says it is better for the public to have a whole-timer. This I think is quite as erroneous a statement as the others. A part-timer is certainly cheaper than the whole-timer, who will cost no more himself, perhaps, but will pretty certainly necessitate a large army of inspectors and other officials and a number of institutions. Unquestionably if every medical officer of health had to serve five years in bona fide general practice he would be better qualified for the post. A general practitioner knows the wants and requirements, the difficulties, and the necessities of his "parishioners"; he has a large sympathy with them (generally a quality which a mere "official" is bound to curb), and they have a greater confidence in him, and can come in confidence, as they often do, not to shake their fists in his face but to ask for reform and help in sanitary matters, which they dare not ask for openly; and where the people know the medical officer of health is to be trusted it is surprising the number of "nuisances," etc, which are dealt with by request.

Again, Dr. Larking says part-timers are not good for general practitioners, but what of whole-timers? Who has engineered the systematic removal of all infectious diseases, of phthisis? Because, although of questionable service to the public and very costly also, these have been taken away from the general practitioners; midwifery also has been taken from them; the treatment of infants (by notification of births and inspectors) has been taken away, medical treatment of school children is being taken away; and yet, with all the shrinking of the field of private

work, openly pushed by the whole-timers, Dr. Larking asks us to believe that they are the friends of the general practitioners.

I maintain that all these things which have been enumerated ought to be in the hands of general practitioners; it is their birthright, and I believe they are as capable of doing the work as well as any other official class, but I much fear that their birthright is being sold for a mess of pottage.

The comparison of the salaries of medical officers of health with clerks is a very striking illustration of the wretched business aptitude of medical men, but will, I feel sure, show on comparison that in districts where part-time medical officers of health are employed, they are proportionately (to the clerks) better than in districts where whole-timers are employed.

This letter is already too long, but the subject is capable of considerably more expansion to show how very short-sighted a policy it is for general practitioners to be led by "officials" who are out of touch and sympathy with the work of general practitioners, to curtail their sphere of work so enormously, while curtailing the "number of practitioners "so very slightly.—I am, etc.,

Northwich, Feb. 6th. HENRY EDWARD GOUGH.

GYNAECOLOGICAL DIFFICULTIES OF THE GENERAL PRACTITIONER.

SIR,—I am glad to find that Dr. Hastings Tweedy regards the conclusions I drew from his paper on endometritis as "erroneous and extraordinary."

Nevertheless I think they follow from the plain meaning of his language. I ask leave to quote a few sentences. He said[1]: "All these symptoms" (that is, symptoms complained of by nearly every woman who is tired or run down) "may be wanting in *severe types* (italics mine) of endometritis, the presence of which can only certainly be ascertained after miscarriage, abnormalities of the pregnant or parturient state, such as *ante-partum* or *post-partum* haemorrhage, abortions, hydatidiform mole, hydrorrhoea gravidarum, etc. Or again, the accidental discovery of a large uterus may alone direct attention to the condition. Therefore, *whether symptoms are present or not* (italics mine), if dealing with a condition which you have a reasonable suspicion will cause endometritis, treat your patient for endometritis, *irrespective of precise symptoms*" (italics mine). I submit that this amounts to advising the young practitioner to curette every patient who will let him do it, whether there is anything the matter or not, on the ground that if she has any kind of symptoms these may be due to endometritis; and if she has no symptoms then she may be going to have endometritis. Dr. Hastings Tweedy says that "it is self-evident that a disease must precede its symptoms." Yes, but till the symptoms appear, how can any one tell that the disease is there?

To Dr. Hastings Tweedy's incidental question about a case of ventral fixation, I reply that the uterus was not curetted.—I am, etc.,

London, W., Feb. 8th. G. ERNEST HERMAN.

THE MEDICAL PARLIAMENTARY ROLL.

SIR,—Dr. Keenan says that in assuming the Parliament held by James II in Dublin after his deposition to be irregular, I am "thinking too Britannically," as James had not been deposed from the crown of Ireland by his loyal Irish subjects. I have never heard that James received the crown of Ireland from his loyal Irish subjects. I have always understood that he was crowned King of the three Kingdoms at Westminster, and deposed from the same position at the same place.

I have to thank Mr. John Patching of Brighton for pointing out the following serious omission from my Parliamentary Roll:

Robertson, Sir William Tindall, M.D.Edin., F.R.C.P.Lond. (Brighton, November 29th, 1886—October 6th, 1889). Sir W. T. Robertson was originally in practice in Nottingham, and when, in 1857, the British Medical Association visited that town, he delivered the Address in Medicine. In 1873 his eyesight failed and he went to live at Brighton. At Brighton he became very popular, and was sent to Parliament without opposition. In May, 1889, while leaving the House of Commons, he slipped and sprained his ankle. The enforced idleness produced by this accident and by the blindness acting upon a hypersensitive nature brought on a condition of melancholia, which it is to be feared ended in suicide (see obituary notice in the BRITISH MEDICAL JOURNAL, October 12th, 1889). Dr. Robertson received the honour of knighthood, January 1st, 1888.

The Borough of Brighton is singular in having, during its comparatively short enfranchisement, sent two blind members to Parliament—Sir W. T. Robertson and Professor Fawcett.—I am, etc.,

London, W., Feb. 4th. S. D. CLIPPINGDALE.

[1] BRITISH MEDICAL JOURNAL, October 9th, 1909, p. 1029.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

M.D.—E. H. Coleman, Johns; W. B. Swete-Evans, Clare.
M.B.—F. R. Thornton, Trin.
B.C.—H. G. Monteith, Pemb.

UNIVERSITY OF BIRMINGHAM.

Number of Students.

THE report of the Principal (Sir Oliver Lodge) states that the registered students last session numbered 984, of whom 565 were matriculated students. They were distributed as follows, some previous years being given for comparison:

	1908-9.	1906-7.	1904-5.	1903-4.	1902-3.
Faculty of Science	245	207	134	99	69
Faculty of Arts	215	170	124	85	57
Faculty of Commerce	30	18	16	13	6
Faculty of Medicine	75	66	92	89	89
Total matriculated ...	565	461	366	286	221
Unmatriculated	419	483	479	554	586
Total	984	944	845	840	807

Two matriculation examinations were held, one in July and one in September, in addition to other University examinations, with the following result:

	1909.			In 1908.
	July.	Sept.	Total.	
Number of candidates entered	298	135	433	373
Number passed in all subjects	143	53	196	165
Completed examination previously begun	4	15	19	21
Total number rejected	148	58	206	183
Withdrawn from examination	3	9	12	5

Financial Statement.

The financial statement for the year ending September 30th shows that the income was £48,981, as compared with £47,330 in 1908. It included, general endowment £5,267, special endowments £1,950, Government grants £11,000, local authorities' grants £7,581, students' fees £14,361, examination fees £2,483, day training colleges £2,349, bacteriological department £1,578, brewing school £1,092, and Treasury special grant £900. The expenditure amounted to £56,206, as compared with £52,264 in 1908. The chief items of expenditure were: Principal's and Vice-Principal's departments £3,352, stipends of professors, lecturers, and demonstrators £24,671, scholarships £578, university examinations £2,479, departmental expenses £8,261, library £1,058, interest of a mortgage and bank interest £3,338, general management £3,486, maintenance £4,681, brewing school £1,469, contributions to superannuation fund £819, Queen's College Hall of Residence £483, and women's hostel £789. The excess of ordinary expenditure over income was £7,225. In addition, there was £3,208, the expenses connected with the royal visit, and £3,247 expenses in respect to structural alterations, etc., at the Edmund Street buildings, making the total deficiency for the year £13,680. The special appeal for funds which was made last year resulted in promises of donations amounting to £78,493, and £52,170 had been collected at the end of the financial year. Included in this total was the generous donation of £30,000 received from Sir Charles Holcroft, Bart., bringing his contributions to the university funds to the munificent sum of £100,000.

The Libraries.

The libraries received many additional books. During the long vacation the works on mathematics, physics, and chemistry

were transferred from the library at Edmund Street to the Harding Library in the new buildings of the university. The number of volumes in the two libraries is now over 65,000. Arrangements have been continued with the Birmingham Medical Institute, whereby its members are permitted to use the libraries for purposes of reference and study.

Hostels and Clubs.

The women's hostels, the buildings of which were taken over by the university in October, 1908, now contains 37 residents. The number of residents in Queen's College, which is for men students, is now 28 as compared with 21 a year ago. Both institutions are thriving, but until the numbers are made up to the full complement, cannot fail to be a drain on the funds of the university. The university has become responsible for the working of the university club. Heretofore the club has consisted only of a portion of the students, admitted by election, occupying the Great Charles Street premises only, and financing itself, with private guarantees behind it, but without risk to the university. The removal of important departments to the new university buildings materially altered the situation. There all the students have had the benefit of common rooms and refectory without any club subscription. The object of the rearrangement is to abolish the distinction between the privileges in the two places, and therefore an annual subscription of £1 1s. is collected by the university as part of the fees in order that the students in both places may be in the same position in regard to their clubs.

UNIVERSITY COLLEGE, LONDON.

Ludwig Mond Laboratory.

In memory of the late Dr. Ludwig Mond's scientific eminence and his generous gift of £3,000 towards the building of the Institute of Physiology at University College, the College Committee has resolved to name the biochemistry research department of the Institute "The Ludwig Mond Biochemistry Research Laboratory."

Research Studentship on Biometrics.

The University College Committee will shortly proceed to elect a Crewdson-Benington Research Student. The studentship, of the value of £50, tenable for one year in the Biometric Research Laboratory of the College, is for the promotion of research in anthropometry and craniology in relation to evolution. Candidates should send their applications, together with any statement of qualifieations that they desire to submit, not later than March 1st to the Secretary of University College, Gower Street, W.C., who will furnish particulars of the studentship.

Medico-Legal.

DAMAGES FOR DENTAL INJURIES.

On February 2nd, at the Glasgow Sheriff Court, Sheriff Fyfe issued decision in an action against the Hygienic Institute, Glasgow, by James Lawson, who sued for damages for alleged injury caused through an unskilful dental operation. His lordship found that the pursuer, a man aged 45, contracted through a canvasser of defenders to supply him with a set of teeth for the sum of £6, payable by instalments. The contract contained a condition, "Painless extractions with our own 'anaesthetic' done free of charge to those ordering artificial teeth." On September 19th, 1909, pursuer attended defenders' premises at 30, Elmbank Crescent, Glasgow, and an operator was entrusted to extract seventeen teeth to make room for the artificial set. In course of the operation the pursuer's jaw was broken and his mouth very much lacerated. The formation of his mouth has been so altered that it was not likely that he could now be fitted with a set of artificial teeth, and, if he could, a surgical operation, involving much suffering and considerable expense, would most likely be required. His lordship further found that the injuries which the pursuer had sustained were the result of the incompetency, or carelessness, or negligence of the defenders' employee, the operator. He therefore awarded the pursuer £100 damages with expenses. In a note his lordship said it was, unfortunately, within the law for people who were not registered dental practitioners to make contracts to remove teeth. It was a striking illustration of the wide gulf which often existed between the letter and the spirit of a statute that under the Dentist Act of 1878 it was not legal for an unqualified person to take the title of dentist, but it was quite within the law for an unqualified and unregistered person to undertake, for payment, to do dental work. The defenders' firm, the Hygienic Institute, seemed to his lordship about the most barefaced evasion of an Act of Parliament which ingenuity could suggest, for they went as near to designing themselves dentists as it was possible to go.

In the second division of the Court of Session judgement has been given by the Lord Justice Clerk and Lords Low, Ardwall, and Dundas, in an appeal from the Sheriff Court at Airdrie, where Bethia Campbell Dickson, 32, Commonhead Street there, sued the Hygienic Institute, Main Street, Coatbridge, for £50 damages for personal injuries sustained by her in a teeth-drawing operation. Sheriff-Substitute Glegg found that in August, 1908, the defenders' operator subjected the pursuer's mouth to unnecessary violence, tearing away a piece of the jawbone, and causing permanent enlargement, and awarded her £30 damages. Sheriff Millar, on appeal, adhered to the Sheriff-Substitute's interlocutor with expenses, and the defenders appealed to the Court of Session. That Court affirmed the interlocutor appealed against, and found the appellants liable in expenses.

Lord Dundas, who delivered the opinion of the court, said in the course of his observations that the defendants admittedly employed assistants who were not qualified dentists or dental surgeons. Any man who performed a service of art for another was responsible up to the limit of his own profession—that was what he professed or announced to the employer. The question came to be whether or not the actings of the defenders or of their employee had come up to the professions made by them to the pursuer. The first matter therefore for consideration was what the defenders held out or professed to the pursuer. On that point his lordship said he was content to take the order form as embodying what the defenders held out or professed to the pursuer. It was quite idle to contend, as the defenders' counsel did, that the document held out the defenders merely as makers of artificial teeth and not as dentists. It was plain that they also held themselves and their assistants or employees out as extractors of teeth and practisers of dentistry. The lump sum to be paid by the pursuer included the extraction of her teeth. She was, in his lordship's judgement, entitled to expect that the defenders' employees could perform the necessary dental operations with ordinary success and with ordinary care and prudence. That being the fair scope and meaning of the contract between the parties, one turned to the proof to consider whether or not the defenders' actings fell short of their contractural professions to her, and he agreed with the sheriffs that the answer upon that issue must be in the affirmative. There seemed to be no doubt that bone and flesh were in fact torn away from the pursuer's upper jaw with serious and distressing consequences, and no other cause was suggested than the operation; and it was plain upon the evidence that such an operation was a grossly careless one. If, then, the defenders held themselves and their operators out as competent to perform dentistry with ordinary care and success, as his lordship held they did, they must be liable in damages.

At the West London County Court on February 3rd judgement for £100 damages and costs was entered against the London Hygienic Institute and Portman Teeth Institute, Limited, Baker Street. The plaintiff was the wife of a policeman, who had been persuaded by a canvasser of the institute to have certain teeth removed and others substituted. She understood that the whole operation would be painless, whereas, according to her statement, she suffered severe pain, a root was left in, and she had to remain in bed for three weeks.

THE RESPONSIBILITY OF HOSPITALS.

A case of importance to medical practitioners and hospitals has been decided in Glasgow Sheriff Court. In the winter of 1907 a man was removed to Ruchill Fever Hospital (belonging to Glasgow Corporation), sufferng from scarlet fever, and died there. His widow sued the Corporation of Glasgow for £1,000 in respect of its failure to take proper care of her husband in removing him to hospital, and whilst there allowing him when delirious from fever to escape into the grounds and get a chill, which led to his death. She also claimed for a *post-mortem* examination, but this was regarded as irrelevant, and was not insisted in. The proof of the main averments lasted several days, and both parties were represented by counsel. The Sheriff has now issued his judgement assoilzing the defenders with expenses, as the pursuer has failed to prove that death was caused by fault or negligence of defenders. In a "note" the Sheriff goes into the case very thoroughly. The first point was as regards the removal, the case for the pursuer being that the nurse in charge of the ambulance van, who was a probationer, allowed the patient to walk to it in place of being carried. The Sheriff finds that the patient elected to walk, and that there is no proof he suffered from doing so. The main issue was, however, that defenders were negligent in allowing the patient, while delirious, to escape. The ward was admittedly full above normal, containing on the night in question 32 male patients, 25 of whom were boys, 3 were lads, and 4 were adults. More than half of the 32 were convalescents who needed no attention during the night. In normal circumstances one staff nurse was considered sufficient during the night. On this particular night there was a nurse in charge, a night sister within call, a male attendant watching this particular man, and another available in emergency. The resident doctor was under the same roof within call. The patient was delirious, imagined he was being maltreated, and got out of bed more than once. Each time he was coaxed back, and at 11 p.m. the doctor gave him a sedative. It did not act as was anticipated, and at 11.30 the patient got up, evaded the male attendant and nurse, ran about the ward for a bit, and then suddenly broke a window and escaped through it into the grounds. He was captured and brought back and then put in a restraining sheet, and four hours later he died. The Sheriff finds that the attendance provided was sufficient, and there the responsibility of defenders ended. The attendants had not failed in their duty, and there was no evidence that the use of the restraining sheet was improper. He did not consider that either the doctor or male attendant committed any error of judgement, and even if it were proved that the doctor committed an error of judgement, there was no liability on the defenders.

FALSE ASSUMPTION OF MEDICAL TITLES.

CHARLES BANKS, of Cromer Street, Gray's Inn Road, was summoned on February 2nd, at Clerkenwell, at the instance of the Medical Defence Union, being charged under the 40th section of the Medical Act with having used the title M.B. on a death certificate, with having used the the same title on a sick certificate, and with having used the title of "doctor" in a note given by him personally to Thomas William Tyrrell, a clerk of the Medical Defence Union. The death certificate was not valid, but had been accepted by the registrar, and the entry had to be corrected by statutory declaration under the Registration of Births and Deaths Act. Mr. Tyrrell said that when he called at the defendant's address the door was opened to him by a lady with a black eye; defendant, when he appeared, explained that he was just out of bed, and suggested a walk, which ended at a public-house. There he felt witness's pulse, told him he was weak and suffering from consumption, and that if all the complaints from which he suffered were to be enumerated a very large piece of paper would be required. Defendant took witness to a drug store in Gray's Inn Road, where defendant entered the dispensing room and wrote a certificate stating that witness would be greatly benefited by a change of air and surroundings. Witness paid defendant 5s. and 1s. 9d. for having the prescription made up. Another adjournment was made to the public-house, when defendant declared he had a very large practice and had to live where he did because he had to lecture and coach young students close by. The magistrate imposed a fine of £20 for the use of the title M.B. on the death certificate, £5 for the use of the title M.B. on the sick certificate, and a fine of 7s. 6d., to include costs, for the third offence, with the alternative of three months' imprisonment.

MONTHLY NURSE'S FEE.

C. W. H. engaged a nurse for his wife's confinement; it occurred before the time expected. He wrote to the nurse informing her of the fact, and expressing a hope that she would get another case instead; but she replied that she would expect her fee to be paid, as she had refused other cases. He wishes to know if he is legally bound to pay the nurse's fee under the circumstances.

*** We are advised that the nurse is entitled to this fee, unless she gets employment during the time for which she was engaged of the same value. If she gets employment at a lower rate, then our correspondent is only liable to pay the difference between the fee she earns and what he would have paid her had she nursed his wife.

Public Health AND POOR LAW MEDICAL SERVICES.

SCARLET FEVER AT CHESTER.

DURING the whole of last year scarlet fever was present in the city of Chester and nearly 900 cases were notified. This is a far greater number than has been notified in any previous year since the adoption of the Infectious Disease (Notification) Act in 1885, the nearest approach being in 1894, when 256 cases were reported. There appears to be a decrease in the epidemic at the present time, only 30 cases having occurred in January of this year compared with 70 in the same month of 1909. The unusual incidence of the disease is partially explained by Dr. A. E. Thomas, the late medical officer of health, in his annual report for the year 1908. The epidemic of that year, he stated, was characterized by the mildness of the cases; it was not unusual to find that a child had had an undoubted attack of scarlet fever without missing a single day's school attendance, or, on the other hand, had been absent for a few days and returned with the information that it had had mumps. In Chester any swelling at or around the lower jaw seems to be regarded as mumps. Pressure on the isolation hospital in 1908 rendered it impossible to admit all the cases in which that course was advisable, so that many patients had to be treated in their own homes, where there was often no effective means of isolation. If this was the case in 1908, when there were only 163 cases of the disease during the whole year, much more must it have applied in 1909, when there were more than that number in the single month of October. Still another cause for the persistence of the epidemic is to be found in the callous indifference of the parents of those children who have been infected. The Chester Corporation is to be commended for its action in taking proceedings before the local justices against four such persons, three of whom had permitted infected children or infected clothing to be exposed in a public place, and one who had not notified to the medical officer of health an undoubted case of the disease. The chairman of the bench of magistrates before whom the cases were tried expressed the opinion that the Health Committee of the corporation had done wisely in bringing the cases up, in order that parents might know their duty, but he thought that justice would be met if each defendant were ordered to pay the costs. This result appears to mean that no conviction was recorded, a circumstance which must be discouraging not only to the Health Committee but also to the sanitary officials.

SCHOOL CLINICS AND THE LABOUR PARTY.

THE annual conference of the Labour Party has been in progress this week in Newport, Monmouthshire, and in one of its sections—that representative of the work done by women—two resolutions of medical interest were adopted. One of these, moved by Dr. Ethel Bentham and seconded by Dr. Marion Phillips, stated that the conference asked for the immediate establishment of free, compulsory, and convenient means of obtaining medical treatment for school children, and declared itself in favour of school clinics, believing these to offer opportunities for supplying needs not met either by hospital or home. The other resolution drew attention to the undesirable results, in point of health and other respects, of young children between the ages of 14 and 18 being constantly kept at work entailing neither physical nor technical training, and urged on Government the desirability of so amending the Factory and Education Acts as to secure efficient physical and technical training for every boy and girl between the ages of 14 and 18, and to make some provision for the maintenance of the children during that period. Further resolutions advocated that education authorities should not only be permitted, as at present, but obliged to provide meals for school children whose parents cannot provide them, and that the Factory and Workshops Act should be so amended as to extend the period during which women may not be employed after childbirth from four weeks to six months.

FOOD ADULTERATION IN BIRMINGHAM.

DURING the last quarter of last year 763 samples were analysed and have been reported on by the city analyst (Mr. J. F. Liverseege). Of these, 581 were taken for analysis under the Food and Drugs Act, and 2.2 per cent. were adulterated with preservatives only, being a rather higher proportion than usual owing to an increase in the use of preservatives for milk and beer. In addition to this, 5 3 per cent. of the samples—practically the same percentage as in the corresponding quarter for 1908—were adulterated in other ways than by preservatives. Eleven of the 257 samples of milk analysed contained less than 11 5 per cent. of total solids, being below the standard fixed by the Board of Agriculture. Three samples of milk contained small proportions of formic aldehyde, and five samples boric acid; 3.1 per cent. of the samples of milk were adulterated with preservatives, as compared with 1.4 per cent. in the fourth quarter of the previous year. Of the 219 samples of butter analysed, 20, or 9.1 per cent., were adulterated with foreign fat. This proportion is considerably higher than in the two previous years, but not so high as in 1906 and 1905, when 12.4 per cent. and 14.1 per cent. respectively were adulterated. The 219 samples were obtained from 159 vendors, of whom 9 sold one or more adulterated samples, showing that 5.7 per cent. of the vendors of butter sold an adulterated article. Two vendors were fined £5 each for selling margarine when butter was asked for. Of 29 samples of beer analysed 25 were passed as genuine. Two samples from one vendor contained a slight excess of chlorides, while two samples from another vendor contained 126 and 130 grains per gallon of chlorides expressed as common salt. The brewer of these samples was communicated with, and he supplied samples of the materials used in brewing and gave particulars of the quantities. These samples were analysed, and the source of the chlorides was found to be as follows: Malt 4.5 grains, glucose 28.8 grains, hops 0.2 grain, water 1.3 grains, Burtoniser 47.2 grains, salt 43.7 grains, clarifier 4.4 grains, being a total of 130.1 grains per gallon, expressed as common salt. The three ingredients responsible for the excess, therefore, were the Burtoniser, glucose, and the common salt added as such. Both vendors were cautioned by the Health Subcommittee.

THE NOTIFICATION OF BIRTHS.

PASCE (London) asks if any movement has been made by any body of medical men to obtain payment for certificates under the Early Notification of Births Act, etc.

*** We believe that the feeling among general practitioners has been for the most part opposed to taking any responsibility for notification of births either with or without a fee, on the ground that cases not rarely occur in which patients would resent such a notification by their medical attendant, who ought to regard everything that occurs in his practice as private and confidential. It is not always possible to know when such resentment would be entertained; and, in any case, it is felt that the responsibility for notification ought to be laid on the parents alone, not on the medical attendant. For this reason there has been no general attempt to obtain payment for certificates, but in several isolated cases urban district councils which have adopted the Act have been approached and asked for a fee of 1s., the council to supply printed forms for filling up. As far as we know, the answer has been that there are no funds available for the purpose of paying such fees, and the Act makes no provision for payment. In several districts where the Act has been adopted the medical men have tacitly ignored it, and no attempt has been made to enforce it on them. In several other districts medical men have been prosecuted for failing to notify, but the plea that they had reason to believe the parents would notify has been accepted.

The Services.

INDIAN MEDICAL SERVICE.

AT the January examination for commissions in the Indian Medical Service there were 34 candidates, of whom 28 ultimately entered for the examination; of these, 26 qualified, the first 13 being admitted as Lieutenants-on-Probation, while 1 withdrew during the examination. The names of the successful candidates, with the marks obtained by each out of a possible total of 5,100 are given below, together with their degrees and medical schools:

Name.	Degrees, etc.	Medical School.	Marks.
E. G. Kennedy ...	M.B., B.Ch., B.A.O. (R.U.I.)	Queen's College, Cork	3,629
R. F. D. MacGregor	M.B., Ch.B.Edin.	Edinburgh University; Coombe Hospital, Dublin; West London Hospital	3,532
A. L. Sheppard ...	M.B., B.S.Durh.	Durham University; Newcastle Royal Infirmary; Bristol Royal Infirmary	3,510
P. K. Gilroy ...	M.R.C.S., L.R.C.P., M.B., B.C.Cantab.	Selwyn College and Addenbrooke's Hospital, Cambridge; St. George's Hospital	3,436
J. A. A. Kernahan	M.R.C.S., L.R.C.P.	St. Bartholomew's Hospital	3,428
M. L. C. Irvine ...	M.B., B.S.Lond., M.R.C.S., L.R.C.P.	St. Thomas's Hospital	3,408
E. W. O'G. Kirwan	M.B., B.Ch., B.A.O. (R.U.I.), L.M.Dubl.	University College and Catholic University School of Medicine, Dublin	3,357
A. N. Palit... ...	L.M. and S.Calcutta, F.R.C.S., L.R.C.P.Edin., L.F.P. and S.Glas.	Calcutta Medical College; University College Hospital	3,291
J. V. Macdonald ..	M.B., Ch.B.Edin.	Edinburgh University	3,279
H. A. H. Robson...	M.B., B.S.Lond., M.R.C.S.	St. Thomas's Hospital	3,261
G. L. Duncan ...	M.B., Ch.B.Edin.	Edinburgh University and School of Medicine, Edinburgh	3,243
K. K. Mukerji ...	L.M. and S.Calcutta, L.R.C.S. and P.Ed., L.F.P. and S.Glas., D.P.H.Cantab.	Calcutta Medical College; Westminster Hospital; Royal Infirmary, Liverpool	3,112
C. G. Howlett ...	M.B., Ch.B.Victoria University, Manchester	Victoria University and Royal Infirmary, Manchester	3,074

Obituary.

To the very great regret of his friends, there died on January 28th, after a week's illness, HAROLD JAMES CROMPTON, M.D., D.P.H., one of the Medical Officers of the County Asylum, Prestwich, Manchester, at the age of 37 years. After leaving school, he spent three years in Paris studying chemistry, whence he proceeded to Manchester to begin his medical education. In 1894 he was awarded the medal in materia medica at Owens College and the Society of Apothecaries' gold medal in materia medica and pharmaceutical chemistry. He took the degrees of M.B., Ch.B. with honours in 1898, and in 1903 that of M.D. with commendation for his research into the pharmacology of selenium, tellurium, and arsenic. Afterwards he obtained the diploma in public health. After qualifying, he became House-Physician at the Manchester Royal Infirmary, where he later served as Resident Medical Officer. He acted as House-Surgeon at Ancoats Hospital, and as Resident Medical Officer at the Barnes Convalescent Hospital, Cheadle. His last years were spent in work at the Prestwich Asylum. Highly efficient as a physician and a capable administrator, he was a man of wide culture. Well read in the literatures of England and France, he had an altogether extraordinary acquaintance with classical and modern music, and was an enthusiastic golfer. Witty himself and quick to see humour, he loved to observe men and manners. Always reserved, always true, always large-hearted and generous, he made many friends, and by them his untimely death will be deplored to the end of their lives.

Letters, Notes, and Answers.

BRITISH MEDICAL ASSOCIATION AND BRITISH MEDICAL JOURNAL.

THE offices of the British Medical Association and of the BRITISH MEDICAL JOURNAL are at 429, Strand, London.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

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2634, Gerrard, MEDICAL SECRETARY.

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CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

R. C. H. asks whether it would be possible for a patient to take chicken-pox from a dog supposed to have distemper. The dog has had suppuration of its eyes, and is said to have lost the sight of one of them and may lose the sight of the other. The case is one in which every source of infection has been eliminated except this one of the dog.

ANSWERS.

ARTIFICIAL EYE FOR CHILD.

DR. G. H. MAPLETON (Goudhurst, Kent) writes, in reply to "T.": My experience is that a child is practically never too young to wear an artificial eye. In the case of a shallow sac, the eye may have to be flat and scale-like at first.

PRURITUS IN GLYCOSURIA.

DR. PERCY NEWELL (St. Leonards-on-Sea) writes: I would suggest that before "Nemo" submits his patient to electrical treatment he should prescribe an ointment as follows:—Creosoti pur. ♏33; ungt. conii ʒj. M., ft. ungt. To be kept constantly applied. If he has not tried uranium internally it would be worth while doing so.

FRENCH DICTIONARY.

IN reply to a correspondent who some time ago inquired as to a small French dictionary, Dr. George Pernet recommends the following: Landais, Napoléon, *Petit Dict. des Dictionnaires français*, 1 vol. in 32, 600 pages; paper cover, 1 fr. 50 c.; bound, 2 fr. (Perrin and Cie., Paris.)

EXERCISES FOR ADOLESCENT SCOLIOSIS.

"STOCKHOLM," who writes from that city, sends the following reply to "Countryman" (BRITISH MEDICAL JOURNAL, January 22nd, p. 239): Remedial exercises for scoliosis and other deformities and diseases cannot be learnt from a book, any more than auscultation of the heart can, and the idea of a practitioner (whose education in medical gymnastics has been neglected) endeavouring to compile exercises for scoliosis should not be thought of. Over-correction is easily brought about in some cases, whilst injudicious movements given by a person who has received no training in this branch of treatment may easily produce harmful results. In my opinion such a case as "Countryman" mentions should be sent to a specialist for treatment.

HEAT STROKE.

CALOR writes: "Femur" will find reference to this subject in Ziemssen's *Cyclopaedia of Medicine*, vol. xii; Billroth's *Surgical Pathology*, Wunderlich's *Medical Thermometry*, Charcot's works, Taylor's *Medical Jurisprudence*, and, for periodical literature, Neale's *Medical Digest*.

*** We may add to this list a paper by Dr. Harvey Sutton, published in the *Journal of Pathology and Bacteriology*, vol. xiii, p. 63, an annotation on which was published in the BRITISH MEDICAL JOURNAL of October 17th, 1908, p. 1206.

MANURIAL VALUE OF DRY EARTH FROM CLOSETS.

IN reply to "Reform's" query (JOURNAL, January 29th, p. 300), Dr. G. Pernet (London) writes: I would recommend the perusal of the following works by my old friend and teacher, the late Dr. George Vivian Poore: (1) *Essays on Rural Hygiene*, third edition (Longmans. 1903); (2) *The Dwelling House*; (3) *The Earth in Relation to the Preservation and Destruction of Contagion*; (4) *Colonial and Camp Sanitation*.

G. D. writes: "Reform" will find human excreta roughly valued at 10s. per head per annum in Dr. Geo. S. Keith's *On Sanitary and Other Matters* (London: A. C. Black. 2s. 6d.), which contains a very interesting account of the dry earth system in chapter i, which he would do well to read. Dr. Keith estimates the loss to the nation by the water system at 20 millions per annum.

CUPPING THE CERVIX UTERI.

DR. CHARLES A. ADAIR DIGHTON (Scarborough) writes: In answer to the query of "O. B." in the BRITISH MEDICAL JOURNAL of February 5th, p. 359, as to instruments and technique for cupping the cervix uteri in cases of endometritis, there are special Bier's suction glasses made closely resembling a Ferguson's speculum in shape, and these can be obtained at most instrument dealers. The technique is practically the same as for other kinds of cupping by Bier's method—namely, five minutes' suction and three minutes' rest, the whole sitting lasting three quarters of an hour. This should be repeated night and morning, and must on no account whatever produce any pain. Full details of technique and illustrations of appliances are given in *Bier's Hyperemic Treatment*, by Meyer and Schmeiden, published by Saunders and Co.

ANAESTHESIA FOR OPERATIONS IN PILES.

T. W.—It is the usual practice in this country to give a general anaesthetic for operations for piles. The choice of a drug for inhalation is determined by other considerations than the locality of the operation, except in so far as very deep narcosis is often necessary for satisfactory stretching of the sphincter. Spinal analgesia may be employed in any subject who presents a contraindication to inhalation narcosis. In America cocaine, eucaine, alypin, novocain, chloretone, and simple sterilized water have been used for local analgesia in operating on both external and internal piles. A 1 per cent. solution of eucaine lactate for the skin and a solution one-tenth that strength, employed so as to distend the whole area of operation, may suffice for a "painless" operation, but there is always some discomfort. If adrenalin be added, it should not be of greater strength in the solution than 1 in 10,000. Local analgesia cannot be said to "answer as well as a general anaesthetic."

LETTERS, NOTES, ETC.

DOCTORS AND HAIRDRESSERS.

THE Secretary of the Northern Counties Hairdressers' Federation (Warrington) writes: As a trade we are subject to charges being brought against us by customers who have contracted in some way a facial disease, and we have found that very often the suspicion has been cast upon us—as the cause of such disease—by the doctor to whom the customer has gone for treatment, no doubt unwittingly on the doctor's part. We, as a federation, have adopted a code of sanitary rules for our shops, based upon the advice of high medical authority, and we are doing what it is possible for us to do to minimize any danger which may arise in our shops and during the course of our business. We, therefore, courteously ask doctors to consider our position when a facial disease which may be caused in many different ways is submitted for their diagnosis and treatment, to name it by its proper name—namely, sycosis, tinea sycosis, impetigo, etc., and not to call it "barber's itch" or "barber's rash," or say at once it is through a "dirty shave." Our federation is always anxious to work in accordance with the best medical advice, and several of our branches have appointed local medical advisers to whom they may apply for professional guidance, and who on several occasions have given lectures on the best sanitary methods of conducting our business, from which much benefit has been derived.

AN EFFECT OF COFFEE.

M.D., D.P.H., M.R.C.S., L.R.C.P. writes: I was very interested in reading the experience of "M.D., D.P.H." on the effect of coffee. I have several patients who suffer exactly as the writer of the article did, and have tried to find a cause for the very unpleasant symptoms by eliminating certain articles of diet, but without marked success. None of these patients ever take coffee. Does the writer think smoking may be a cause, or is there any other possible factor in his case which might account for the feelings of "dread of losing mental control" which so many neurasthenic patients complain of? If the writer could further elucidate these facts he would be conferring an immense boon upon many sufferers, as the symptoms described are becoming, in my experience, very common, especially amongst persons of the cultured and intellectual classes. I might add that a medical man was completely cured of these symptoms after removal of the appendix; he was at one time so ill with depression that he consulted a brain specialist.

TREATMENT OF RINGWORM.

DR. HENRY WALDO (Consulting Physician to the Bristol Royal Infirmary, late Senior Physician, and in charge of the Department for Skin Diseases, Bristol) writes: Dr. Lynn Jenkins, in a memorandum in the BRITISH MEDICAL JOURNAL of January 29th, concludes that ringworm of the scalp is easily cured by using the essential oil of sassafras. Perhaps these were cases of large-spore fungus! I consider that the treatment of small-spore ringworm of the scalp is most difficult and unsatisfactory. If one mode is better than another, I think it consists in imitating Nature's cure, and producing a mild *kerion*. With croton oil diluted to the extent of causing a redness of the hair follicles without any scabbing, there is no fear of producing any bald patch, and if persevered in and accompanied with systematic epilation it is the most effectual treatment in the majority of cases. We are told that *x* rays are sure and safe if manipulated by an expert. But I am assured from a high authority at one of the largest London hospitals that the average of permanent baldness from the rays is 1 in 300.

IS IT SAFE?

DR. WM. HARDMAN, M.B., J.P., etc. (Blackpool), in a note under this heading, writes: (1) The Calmette conjunctival tuberculin reaction for the diagnosis of tuberculosis is occasionally followed by destructive inflammation of the eye, and damage to, or loss of, the sight. (2) The intra-arachnoid injection of cocaine, or its derivatives, or magnesium sulphate, is sometimes followed by permanent paralysis. (3) The treatment of syphilis, or other condition, by the intramuscular or hypodermic injection of the arylarsonates may be followed by neuritic atrophy of the optic nerve, and consequent blindness. In each of these cases it is certain that the dire consequence is caused by the respective act. Therefore, I hold that it is not safe for the medical man to practise any of these procedures. These comments are intended also to have an interrogative aspect.

CIRCUMCISION IN ANCIENT EGYPT.

DR. ALBERT CHURCHWARD (South Norwood, S.E.) writes: Dr. G. Elliot Smith is quite right about the antiquity of circumcision practised in Ancient Egypt (see a previous letter of mine in the BRITISH MEDICAL JOURNAL), and to those interested in this subject I would refer them to a plate on page 86 (in a book of mine, which I hope will be ready for the public next month—*Signs and Symbols of Primordial Man*), taken from the Borgian Codex, which shows that circumcision was practised in the Central States of America at least 10,000 years ago, and that this "rite" was brought here from Ancient Egypt; and not only circumcision, but subincision as well, the meaning of which I have fully explained, and why all the aboriginal natives of the stellar Mythos, wherever found throughout the world, practise, and still carry on, this "rite."

SEA-SICKNESS.

DR. A. VAVASOUR ELDER (ss. *Cretic*) writes: Sea-sickness may be briefly described as the reflex result of psychical and physical causes acting concertedly in varying degrees of individual ascendancy. In some cases the psychical preponderates, in others the physical. Instances of both might be quoted in full and yet leave the subject undetermined. Experience has shown that much can be done to relieve suffering by therapeutic measures conducted along both lines of argument. As the size of ships increases there is naturally a greater steadiness and less disturbance of equilibrium at sea than formerly. This results in a marked decrease in the number of cases of sea-sickness in which the physical factor predominates. It remains to be seen whether by diminishing motion the general application of the gyroscope to larger vessels will not be of more material service to suffering humanity than the whole faculty and pharmacopoeia combined. Until, however, the psychic element can be completely eliminated as a causative factor there is not much to be expected in the form of a universal cure. In all probability "air-sickness" will be puzzling therapeutists long before its marine prototype is relegated to the limbo of therapeutic successes. The foregoing may seem to be a very pessimistic view to hold in face of the daily increasing strides made in the realm of medicine, but it is the outcome of several years' close investigation under progressingly favourable circumstances—that is, from a ship of 2,000 tons to one of 16,000 tons. With every increase in size of ship the results were more promising, but in each the constant and common bar to complete success was found in the psychic element.

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